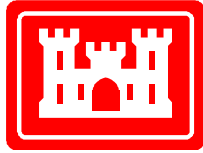


FINAL ENVIRONMENTAL IMPACT STATEMENT FOR A PROPOSED WATER TREATMENT RESIDUALS MANAGEMENT PROCESS FOR THE WASHINGTON AQUEDUCT, WASHINGTON, D.C.



US Army Corps of Engineers
Baltimore District

VOLUME 2A APPENDICES



Prepared by:

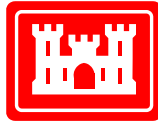
**U.S. Army Corps of Engineers, Baltimore District
Washington Aqueduct
5900 MacArthur Boulevard
Washington, D.C. 20016**

September 2005

**FINAL ENVIRONMENTAL IMPACT STATEMENT
FOR A PROPOSED WATER TREATMENT RESIDUALS MANAGEMENT
PROCESS FOR THE WASHINGTON
AQUEDUCT, WASHINGTON, D.C.**

**VOLUME 2A
APPENDICES**

Prepared by:



U.S. Army Corps of Engineers
Baltimore District
Washington Aqueduct
5900 MacArthur Boulevard
Washington, D.C. 20016
and



In Cooperation with:



This Final Environmental Impact Statement (FEIS) describes a proposed project to alter the Washington Aqueduct's current practice of discharging water treatment residuals to the Potomac River to one of instead collecting, treating, then disposing of the residuals at an alternate location. Over 160 alternatives were considered and screened, and four of these, plus the no-action alternative were evaluated in detail to determine the potential for environmental, engineering, and economic impacts. A proposed action, the environmentally preferred alternative, is identified; It involves collection of the residuals at the Dalecarlia Water Treatment Plant and Georgetown Reservoir, treatment of residuals at an East Dalecarlia Processing Site on government property that is located north of Sibley Memorial Hospital in the District of Columbia, and then disposal of residuals by trucking on major streets to licensed land disposal sites likely located in Maryland or Virginia.

For further information, please contact:

Mr. Michael Peterson
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Michael.C.Peterson@usace.army.mil

September 2005

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 - Soil, Geology and Groundwater Resources
 - Transportation
 - Socioeconomic and Environmental Justice
 - Public Health

PREPARERS AND AGENCIES TO WHOM DOCUMENT HAS BEEN SENT

- LIST OF PREPARERS
- LIST OF AGENCIES AND INDIVIDUALS

List of Preparers

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Qualifications: B.S., United States Military Academy, West Point, NY 1967; M.E., Nuclear Engineering, Iowa State University, Ames, IA, 1972; MBA, CW Post Center, Long Island University, 1975

Project Role: Overall Project Responsibility

Patricia A. Gamby, Chief, Waterworks/Environmental/ Electrical Section, Planning and Engineering Branch, Washington Aqueduct

Qualifications: B.S., Civil Engineering, University of Maryland, College Park, 1982

Project Role: Project Manager

David MacGregor, Chief, Planning and Engineering Branch, Washington Aqueduct

Qualifications: B.S., Civil Engineering, University of Maryland, College Park, 1971

Project Role: Senior Project Manager

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Qualifications: B.S., Civil Engineering, University of Maryland, College Park, 1999;

M.S., Environmental Engineering, University of Maryland, College Park, 2005

Project Role: Staff Engineer, Public Outreach Point-Of-Contact

Andrea Walker, Environmental Protection Specialist, Planning and Environmental Services Branch, Planning Division

Qualifications: B.S., Recreation and Leisure Administration, York College of Pennsylvania, 1994.

Project Role: NEPA Advisor

Ron Mardaga, Environmental Program Manager, Planning and Environmental Services Branch, Planning Division

Qualifications: A.A., Business Administration, Baltimore County Community College, 1971.

Project Role: NEPA Advisor

James Bemis, JD, Attorney, Baltimore District Office of Counsel

Qualifications: B.S., Public Affairs/ Administration, Indiana University, 1979, M.P.A., Public Financial Administration, Indiana University, 1985, J.D., Indiana University, 1985

Project Role: Project Counsel

Patricia Ryan, JD, Attorney, Baltimore District Office of Counsel

Qualifications: B.A., Marquette University, 1982, J.D. Georgetown University, 2002

Project Role: Project Counsel

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Project Role: Principle in Charge

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Project Role: Public Involvement and NEPA Task Manager

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Project Role: EIS Quality Manager

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Qualifications: M.S., Environmental Engineer, Duke University, 1998

B.S., Engineering Technology, Bates College, 1994

B.E., Chemical Engineering, Dartmouth College, 1994

Project Role: EIS Task Manager

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Qualifications: B.S., Civil Engineering, University of Massachusetts 1987,

M.S., Environmental Engineering, University of Massachusetts 1987,

B.A., Education, University of Massachusetts 1975

Project Role: Feasibility Study Task Manager

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Qualifications: B.S., Civil Engineering, Purdue University, 1964

Project Role: Senior quality control reviewer for the Engineering Feasibility Study

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Qualifications: M.E., Environmental Engineering, Manhattan College, 1991

B.E., Civil Engineering, Manhattan College, 1988

Project Role: Senior water treatment process engineer

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Qualifications: M.S., Biology and Aquatic Toxicology, 1979, B.S., Biology, 1974

Project Role: Biological Resources

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Qualifications: M.S., Environmental Engineer, Duke University, 1998

B.S., Engineering, Bates College, 1994

B.E., Chemical Engineering, Dartmouth College, 1994

Project Role: Public Health, Infrastructure, Transportation, Implementation Uncertainty

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Project Role: Air Quality and NEPA Toxicity

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Qualifications: M.A., American Studies/Graduate Program in Historic Preservation, The George Washington University, September 1994, B.I.D., Interior Design, FIDER accredited, Louisiana State University, 1991, B.S., General Studies (Psychology and Art History), Louisiana State University, 1981.

Project Role: Cultural Resources

Jed Campbell, Senior Technologist

Qualifications: B.S., Environmental Resource Management and Economics, Allegheny

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Project Role: Public Involvement

Michael Clayton, Environmental Scientist

Qualifications: B.S., Entomology and Applied Ecology, University of Delaware, 1995

Project Role: Land Use, Wetlands, and geology

Ginny Farris, Environmental Planner

Qualifications: B.A., Psychology, George Mason University, 1978

Project Role: Socioeconomic

Ed Fleischer, P.E., Environmental Engineer

Qualifications: B.S., Civil Engineering, University of Massachusetts 1987,

M.S., Environmental Engineering, University of Massachusetts 1987,

B.A., Education, University of Massachusetts 1975

Project Role: Land Application of Residuals, Public Health and Cost

Laura Haught, Environmental Scientist

Qualifications: B.S., Biology, George Mason University, 1998

Project Role: Biological Resources, Soils, Geology, and Groundwater

Mark C Lucas, Senior Technologist/Hydrogeologist

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Project Role: Soils, geology and groundwater

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Environmental Engineering, University of North Carolina, 1981

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B.S., Meteorology, University of Lowell, 1978

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M.L.A., Environmental Planning, University of California, Berkeley

M.C.P., City Planning, University of California, Berkeley

B.U.P., Urban Planning, University of Illinois

Project Role: Visual Aesthetics

Kiesha Wilson, Environmental Scientist

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Project Role: Hazardous, Toxic, and Radioactive Substances

Mary Beth Yansura, Air Quality Specialist

Qualifications: B.A., Chemistry, Rutgers University, 1988

A.A., Chemistry, County College of Morris, 1986

Project Role: Mobile Source Air Emission Modeling

List of Agencies, Organizations, and persons to whom copies of the statement are sent

AGENCY and ORGANIZATION RECIPIENTS

- U.S. Environmental Protection Agency, Office of Federal Activity
- U.S. Department of Interior
- D.C. Department of Public Works
- District of Columbia Fire and Emergency Medical Services
- Montgomery County Government Department of Environmental Protection
- D.C. Department of Transportation
- Metropolitan Police Department
- Montgomery County Department of Public Works and Transportation
- Solid Waste Management, D.C. Department of Public Works
- Metropolitan Washington Council of Governments
- Montgomery County District 1 Councilmember (Maryland)
- Fisheries and Wildlife Division, D.C. Department of Health
- Water Quality Division, D.C. Department of Health
- Chesapeake Bay Field Office, U.S. Fish and Wildlife Service
- Water Management Administration, Maryland Department of the Environment
- D.C. Water and Sewer Authority
- National Capital Region, National Park Service
- District of Columbia Councilmember Carol Schwartz
- D.C. Parks and Recreation Department
- Protected Resource Division, National Marine Fisheries Service
- Office of the Deputy Mayor for Planning and Economic Development
- Guest Services Incorporated
- County Manager, Arlington County (Virginia)
- Bureau of Environmental Quality, D.C. Department of Health
- City Manager, City of Falls Church (Virginia)
- Attorney General for the District of Columbia
- Air Quality Division, D.C. Department of Health
- National Capital Planning Commission
- Mayor, City of Falls Church (Virginia)
- Soil Resources Management, D.C. Department of Health
- County Executive, Montgomery County (Maryland)
- Department of Environmental Services, Arlington County (Virginia)
- Honorable Paul S. Sarbanes
- American Sportfishing Association
- The Nature Conservancy of Maryland/D.C.
- Advisory Neighborhood Commission 2E (District of Columbia)
- Arlington County Board
- Historic Preservation Division, D.C. Office of Planning
- Cabin John Citizens Association
- Office of Federal Agency Programs, Advisory Council on Historic Preservation
- Western Avenue Citizens Association

- Chief Operating Officer, Sibley Memorial Hospital
- Advisory Neighborhood Commission 1B (District of Columbia)
- Advisory Neighborhood Commission 3B (District of Columbia)
- District of Columbia Councilmember Jim Graham
- Washington DC Regional Office, Natural Resources Defense Council
- Advisory Neighborhood Commission 3C (District of Columbia)
- National Wilderness Institute
- Advisory Neighborhood Commission 3E (District of Columbia)
- District of Columbia Councilmember Jack Evans
- Honorable Chris Van Hollen
- Honorable Eleanor Holmes Norton
- Palisades Citizens Association
- Office of Maryland Senator Brian Frosh
- Honorable Jim Moran
- Advisory Neighborhood Commission 3D (District of Columbia)
- District of Columbia Councilmember Kathy Patterson
- Watershed Protection Division, D.C. Department of Health
- U.S. Commission of Fine Arts
- General Manager for Environmental Services, City of Falls Church (Virginia)
- Audubon Naturalist Society
- Honorable George P. Radanovich
- U.S. EPA Region III
- Arlington County Environment and Energy Conservation Commission (Virginia)
- Water Quality Division, D.C. Department of Health
- Arlington County Fiscal Affairs Advisory Commission
- Office of Environmental Impact Review, Commonwealth of Virginia
- C&O Canal NHP Headquarters, National Park Service
- Maryland Historical Trust
- MD DNR - Wildlife and Heritage Service
- Westmoreland Citizens Association
- Citizens' Coordinating Committee on Friendship Heights
- Spring Valley-Wesley Heights Citizens Association
- Honorable Barbara A. Mikulski
- Department of Environmental Programs, Metropolitan Washington Council of Governments
- District of Columbia Councilmember Marion Berry
- District of Columbia Councilmember-At-Large Kwame R. Brown
- District of Columbia Councilmember-At-Large Phil Mendelson
- District of Columbia Councilmember-At-Large David Catania
- Bethesda-Chevy Chase, Regional Service Center, Montgomery County (Maryland)
- Montgomery County Council (Maryland)
- State Highway Administration (Maryland)
- Maryland National Capital Park and Planning Commission, Montgomery County Park and Planning
- Potomac Valley League of Montgomery County
- Glen Echo Heights Citizens Association
- George Washington Memorial Parkway, National Park Service

- Washington Suburban Sanitary Commission
- Central Intelligence Agency
- Fairfax Water
- Federal Highway Administration
- City of Rockville, Public Works (Maryland)
- Naval District of Washington (United States Navy)
- Mohican Hills Citizens' Association
- Sumner Village Community Association
- Executive Office of the Mayor (District of Columbia)
- Concerned Neighbors
- SludgeStoppers
- Brookmont Civic League
- Potomac Conservancy
- Sumner Citizens Association
- Springfield Civic Association

CITIZEN RECIPIENTS

- Two hundred forty one citizens of Maryland and the District of Columbia. Names are being withheld for reasons of privacy.

REGULATORY INFORMATION

- MODIFICATION TO FEDERAL FACILITY COMPLIANCE AGREEMENT
- FEDERAL FACILITY COMPLIANCE AGREEMENT (FFCA)
- NOTICE OF INTENT



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

BY FACSIMILE & FIRST CLASS MAIL

Thomas P. Jacobus, P.E.
General Manager
Washington Aqueduct
U.S. Army Corps of Engineers
5900 MacArthur Boulevard, NW
Washington, DC 20016-2514

MAR 01 2005

RE: Request for Modification of Federal Facility Compliance Agreement

Dear Mr. Jacobus:

The U.S. Environmental Protection Agency Region III ("EPA") has received your letter dated February 7, 2005 requesting an extension of the deadline identified in Paragraph 22 of the June 12, 2003 Federal Facility Compliance Agreement ("FFCA"), Docket No. CWA-03-2003-0136DN. This letter serves as EPA's response, pursuant to Paragraph 52 of the FFCA, agreeing to the Washington Aqueduct's request for modification of the FFCA. Your February 7, 2005 letter and this letter should be considered as Exhibits C & D to the FFCA.

Pursuant to paragraph 50 of the FFCA, the Washington Aqueduct has submitted a request for modification of Paragraph 22 of the FFCA that would extend the interim milestone described in that paragraph from June 3, 2005 to October 17, 2005. With this modification, Paragraph 22 now should read as follows:

"No later than ~~June 3, 2005~~ **October 17, 2005**, the Corps shall identify in a notice to EPA the engineering/ best management practices it will implement in order to achieve compliance with the numeric discharge limitations set forth in the NPDES Permit and a schedule for implementing the identified engineering/best management practices as expeditiously as practicable, consistent with best engineering judgment. The schedule shall include major milestones, including selection of a contractor, preliminary design, and final design, as well as the construction phase. The schedule shall achieve compliance with the numeric discharge limitations set forth in the NPDES Permit at one or more of the sedimentation basins no later than March 1, 2008, and to achieve full compliance with the numeric discharge limitations at all basins no later than December 30, 2009."

It is EPA's understanding that the Washington Aqueduct does not propose to extend the March 1, 2008 deadline for achieving compliance with the numeric discharge limitations set forth in National Pollutant Discharge Elimination System Permit No. DC 0000019 (the "NPDES Permit") at one or more of the sedimentation basins. It is also EPA's understanding that the Washington Aqueduct does not propose to extend the December 30, 2009 deadline for achieving full compliance with the NPDES Permit. Your letter states that the Washington Aqueduct intends to exercise its best efforts to comply with the March 1, 2008 and December 30, 2009 deadlines in Paragraph 22. These deadlines remain operative.



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It is EPA's understanding that the Washington Aqueduct proposed this modification to the FFCA to accommodate requests from individuals, organizations, and elected officials for additional opportunities for public comment and involvement in the selection of treatment alternatives to be considered by the Washington Aqueduct for achieving compliance with the NPDES Permit. EPA has received numerous communications from the public and from elected officials expressing a desire that the Washington Aqueduct provide additional opportunities for public involvement with regards to the treatment alternatives. EPA acknowledges the Washington Aqueduct's efforts to involve and inform the public and agrees that providing an additional opportunity for public involvement at the alternatives stage is in the public interest.

Accordingly, EPA finds that the Washington Aqueduct has demonstrated good cause, as described in Paragraphs 50 and 51, for a modification of the FFCA. With this modification to the FFCA, the Washington Aqueduct now has until October 17, 2005 to develop and notify EPA of the engineering/ best management practices it will implement in order to achieve compliance with the numeric discharge limitations set forth in the NPDES Permit and a schedule for implementing the identified engineering/best management practices as expeditiously as practicable, consistent with best engineering judgment as set forth in Paragraph 22 of the FFCA.

Thank you for your continued efforts to comply with NPDES Permit No. DC0000019 and the FFCA. If you have any questions regarding the FFCA, please feel free to contact Stefania D. Shamet, Senior Assistant Regional Counsel, at (215) 814-2682.

Sincerely,



Jon M. Capacasa, Director
Water Protection Division

cc: Jim Bemis (USACE, Baltimore District)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

BY FACSIMILE & FIRST CLASS MAIL

Mr. Thomas P. Jacobus, P.E.
General Manager
Washington Aqueduct
U.S. Army Corps of Engineers
5900 MacArthur Boulevard, NW
Washington, DC 20016-2514

28 JUN 2005

RE: Request for Modification of Federal Facility Compliance Agreement

Dear Mr. Jacobus:

The U.S. Environmental Protection Agency Region III (EPA) has received your letter dated June 9, 2005 requesting an extension of the deadline identified in Paragraph 22 of the June 12, 2003 Federal Facility Compliance Agreement (FFCA), Docket No. CWA-03-2003-0136DN. This letter serves as EPA's response, pursuant to Paragraph 52 of the FFCA, agreeing to the Washington Aqueduct's request for modification of the FFCA. Your June 9, 2005 letter and this letter should be considered as Exhibits E & F to the FFCA.

Pursuant to paragraph 50 of the FFCA, the Washington Aqueduct has submitted a request for modification of Paragraph 22 of the FFCA that would extend the interim milestone described in that paragraph from October 17, 2005 to November 2, 2005. With this modification, Paragraph 22 now should read as follows:

"No later than November 2, 2005, the Corps shall identify in a notice to EPA the engineering/ best management practices it will implement in order to achieve compliance with the numeric discharge limitations set forth in the NPDES Permit and a schedule for implementing the identified engineering/best management practices as expeditiously as practicable, consistent with best engineering judgment. The schedule shall include major milestones, including selection of a contractor, preliminary design, and final design, as well as the construction phase. The schedule shall achieve compliance with the numeric discharge limitations set forth in the NPDES Permit at one or more of the sedimentation basins no later than March 1, 2008, and to achieve full compliance with the numeric discharge limitations at all basins no later than December 30, 2009."

It is EPA's understanding that the Washington Aqueduct does not propose to extend the March 1, 2008 deadline for achieving compliance with the numeric discharge limitations set forth in National Pollutant Discharge Elimination System Permit No. DC 0000019 (the NPDES Permit) at one or more of the sedimentation basins. It is also EPA's understanding that the Washington Aqueduct does not propose to extend the December 30, 2009 deadline for achieving full compliance with the NPDES Permit. Your letter states that the Washington Aqueduct intends to exercise its best efforts to comply with the March 1, 2008 and December 30, 2009 deadlines in Paragraph 22. These deadlines remain operative.



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It is EPA's understanding that the Washington Aqueduct proposed this modification to the FFCA to accommodate requests from individuals, organizations, and elected officials for additional time for public comment on the Draft Environmental Impact Statement ("DEIS"), which analyzes treatment alternatives for achieving compliance with the Washington Aqueduct's NPDES Permit. As you are aware, in January 2005, the Washington Aqueduct proposed and EPA agreed to a modification of the same Paragraph 22 of the FFCA to extend from June 3, 2005 to October 17, 2005 the interim milestone for the Washington Aqueduct to notify EPA of its selected best engineering/best management practices and a schedule for achieving compliance with the NPDES permit. The Washington Aqueduct proposed and EPA agreed to that extension in order to accommodate requests for greater opportunity for public involvement prior to issuance of the DEIS.

EPA recognizes that the evaluation of alternatives for residual solids handling has engendered significant interest in the communities located in the vicinity of the Washington Aqueduct. EPA acknowledges the Washington Aqueduct's efforts to inform and involve the public throughout this process and agrees those efforts are appropriate in light of the circumstances.

Accordingly, EPA finds that the Washington Aqueduct has demonstrated good cause, as described in Paragraphs 50 and 51, for a modification of the FFCA. With this modification to the FFCA, the Washington Aqueduct now has until November 2, 2005 to develop and notify EPA of the engineering/ best management practices it will implement in order to achieve compliance with the numeric discharge limitations set forth in the NPDES Permit and a schedule for implementing the identified engineering/best management practices as expeditiously as practicable, consistent with best engineering judgment as set forth in Paragraph 22 of the FFCA.

Thank you for your continued efforts to comply with NPDES Permit No. DC0000019 and the FFCA. If you have any questions regarding the FFCA, please feel free to contact Stefania D. Shamet, Senior Assistant Regional Counsel, at (215) 814-2682.

Sincerely,

A handwritten signature in black ink, appearing to read "John M. Capacasa", written over a horizontal line.

John M. Capacasa, Director
Water Protection Division

cc: Jim Bernis (USACE, Baltimore District)

BEFORE THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

IN THE MATTER OF

Docket No. CWA-03-2003-0136DN

DEPARTMENT OF THE ARMY
and the ARMY CORPS OF
ENGINEERS,

Respondent

WASHINGTON AQUEDUCT
5000 MacArthur Boulevard, N.W.
Washington, DC 20315-0220

Facility

FEDERAL FACILITY
COMPLIANCE AGREEMENT

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EPA REGION III PHILA. PA

I. SCOPE AND PURPOSE

The express purpose of the undersigned Parties in entering into this Federal Facility Compliance Agreement ("FFCA" or "Agreement") is to address the discharge of pollutants from sedimentation basins and other facilities at the Washington Aqueduct located in Washington, D.C. and to further the goals of the Clean Water Act ("CWA" or "the Act"), 33 U.S.C. §§ 1251-1387. It is the express objective of all provisions and obligations of this Agreement to cause the United States Department of the Army Corps of Engineers to come into full compliance with all applicable Federal, state and local laws, regulations and ordinances governing the discharge of pollutants from the Washington Aqueduct into the waters of the United States.

2. This Agreement addresses discharges to waters of the United States from the Washington Aqueduct. The term "Washington Aqueduct" refers to the Dalecarlia and McMillan water treatment facilities and all real and personal property and appurtenances associated therewith. The Dalecarlia and McMillan water treatment plants supply potable water to the District of Columbia, the County of Arlington, Virginia, and the City of Falls Church, Virginia. In addition, the Washington Aqueduct must maintain a continuous uninterrupted supply of water of sufficient pressure in order to provide for the firefighting and other safety needs of its service area. Pursuant to an Act of Congress dated March 3, 1859 (11 Stat. 84), the Chief of Engineers, U.S. Army Corps of Engineers is responsible for the management and superintendence of the Washington Aqueduct. Ownership of the

Washington Aqueduct is under the administrative jurisdiction of the Department of the Army.

II. JURISDICTION

3. The United States Environmental Protection Agency, Region III ("EPA") and United States Department of the Army Corps of Engineers ("Corps") enter into this Agreement pursuant to the Clean Water Act, 33 U.S.C. §§ 1251-1387, and Executive Order No. 12088. This Agreement contains a "plan," as described in Section 1-601 of Executive Order No. 12088, to achieve and maintain compliance with the CWA.

III. PARTIES

4. The Parties to this FFCA are EPA and the Corps.
5. The Parties recognize that the cost to the Corps of operating and maintaining the Washington Aqueduct is not funded through the usual Federal budgetary mechanisms. Instead, the cost of operating and maintaining the Washington Aqueduct is funded through separate Water Sales Agreements between the Corps and the District of Columbia Water and Sewer Authority, Arlington County Government and Falls Church City Government (collectively the "Wholesale Customers"). These Water Sales Agreements obligate the purchasers (i.e., the Wholesale Customers) to pay their proportional shares of the Corps' costs of operating and maintaining the Washington Aqueduct. Thus, the Wholesale Customers bear the full cost of the operation and maintenance, including capital improvements, of the Washington Aqueduct.
6. The Parties recognize that the relationship between the Corps and the Wholesale Customers is governed by a Memorandum of Understanding Between the District of Columbia Water and Sewer Authority, Arlington County, Virginia and the City of Falls Church, Virginia and Between the District of Columbia Water and Sewer Authority, Arlington County, Virginia, the City of Falls Church, Virginia and the Department of the Army, Acting Through the Chief of Engineers (May 5, 1998) (Exh. A). Among various other provisions, the Memorandum of Understanding requires the Corps to submit a proposed agreement with a regulatory or enforcement agency to the Wholesale Customers if (A) such agreement would require the Corps to undertake a capital improvement to, or modify the operation of the Washington Aqueduct; (B) the cost of the capital improvement or operational modification exceeds a specified amount; and (C) the Corps determines that the capital improvement or operational modification does not represent the least costly means of satisfying the permit or statutory requirement which is the subject of the agreement. The Corps may proceed with such an agreement unless the Wholesale Customer Board votes to reject the agreement within thirty days of submission. See Exhibit A, Article IV, Section 2. The Corps agrees to exercise best

efforts, consistent with the Memorandum of Understanding, to obtain from the Wholesale Customers a written acceptance of the terms and conditions of this FFCA.

7. The undersigned representative of each Party to this Agreement certifies that s/he is fully authorized by the Party whom s/he represents to enter into the terms and conditions of the Agreement and to execute and legally bind that Party to it.

IV. FINDINGS OF FACT AND CONCLUSIONS OF LAW

8. Section 301(a) of the Clean Water Act, 33 U.S.C. § 1311(a), prohibits the discharge of any pollutant into the waters of the United States by any person except in accordance with other specified sections of the Act, including section 402, 33 U.S.C. § 1342.
9. Section 402(a) of the Act, 33 U.S.C. § 1342(a), provides that the Administrator of EPA may issue permits under the National Pollutant Discharge Elimination System ("NPDES") program for the discharge of any pollutant into the waters of the United States upon such specific terms and conditions as the Administrator may prescribe. Each violation of an NPDES permit, and each discharge of a pollutant that is not authorized by an NPDES permit, constitutes a violation of Section 301(a) of the Act, 33 U.S.C. § 1311(a).
10. Raw water is taken from the Potomac River, diverted through a screened intake at Great Falls, Maryland into two brick masonry pipes, and sent to the Dalecarlia Reservoir. Additionally, raw water is withdrawn at the Little Falls Dam via the Little Falls Pumping Station and sent to the Dalecarlia Reservoir. To make it drinkable, the water is treated with sedimentation, filtration and disinfection. Initially, there is some natural settling (i.e., no coagulant is added at that point) of sediment in the Dalecarlia Reservoir. Thereafter, the water is treated either at the Dalecarlia water treatment plant (the Dalecarlia sedimentation basins) or directed to the McMillan water treatment plant via the Georgetown sedimentation basins. Currently, aluminum sulfate (commonly called "alum") is used as a coagulant. This results in aluminum and fine sediments settling into the bottom of the basins. The water also is filtered and disinfected. The sediment and aluminum at the bottom of the sedimentation basins must be removed periodically to maintain the function of the sedimentation basins. Historically, the contents of the sedimentation basins periodically have been discharged through pipes to outfalls on the Potomac River.
1. On or about April 3, 1989, EPA issued to the Corps NPDES Permit No. DC 0000019, which authorizes certain discharges of pollutants from the Washington Aqueduct to waters of the United States, including the Potomac River. As issued on or about April 3, 1989, NPDES Permit No. DC 0000019 did not contain numeric discharge limitations for the following pollutants: total suspended solids, total aluminum, dissolved iron, and total residual chlorine.

12. On or about February 4, 1998, EPA issued to the Corps NPDES Permit No. DC 00000329, which authorizes certain discharges of pollutants from point sources within the Washington Aqueduct, other than those covered by Permit No. DC 0000019 issued in 1989, to waters of the United States. As issued on or about February 4, 1998, NPDES Permit No. DC 00000329 did not contain numeric discharge limitations for the following pollutants: total suspended solids, total aluminum, dissolved iron, and total residual chlorine.
13. On or about March 14, 2003, EPA re-issued NPDES Permit No. DC 0000019 ("the NPDES Permit"), which authorizes certain discharges of pollutants from the Washington Aqueduct to waters of the United States, including the Potomac River and supersedes NPDES Permit Nos. DC 0000019 (issued on or about April 3, 1989) and DC 00000329 (issued on or about February 4, 1998). The discharges authorized by NPDES Permit No. DC 0000019 are described in Exhibit B hereto. Unlike superseded NPDES Permit Nos. DC 0000019 (issued on or about April 3, 1989) and DC 00000329 (issued on or about February 4, 1998), the NPDES Permit contains numeric discharge limitations, with respect to various outfalls, for total suspended solids, total aluminum, and dissolved iron.
14. The Parties recognize that a variety of engineering and/or best management practices may be utilized by the Corps to achieve compliance with the numeric discharge limitations set forth in the NPDES Permit. These include, but are not limited to, conveyance (by pipeline or truck) of the discharge to a wastewater treatment facility for treatment, on-site dewatering and other methods.
15. The Parties further recognize that implementation of one or more of the treatment technologies necessary to achieve compliance with the numeric discharge limitations set forth in the NPDES Permit may require construction of pipelines and other appurtenances.
16. The Parties further recognize that implementation of one or more of the treatment technologies necessary to achieve compliance with the numeric discharge limitations set forth in the NPDES Permit may constitute a major Federal action significantly affecting the quality of the human environment.
7. The Parties further recognize that, prior to selecting one or a combination of treatment technologies to achieve compliance with the numeric discharge limitations set forth in the NPDES Permit, the Corps must satisfy its obligations pursuant to the National Environmental Policy Act ("NEPA"), 42 U.S.C. §§ 4321, et seq.
18. The Parties recognize that implementation (i.e., full design and construction) of one or more of the treatment technologies necessary to achieve compliance with the numeric discharge limitations set forth in the NPDES Permit may require the Corps to obtain

approvals, permits or some other form of authorization from local and/or federal agencies other than EPA, such as the State Historic Preservation Office or the National Park Service.

V. COMPLIANCE PROGRAM

19. The Corps agrees to take any and all necessary steps within its power to achieve compliance with the numeric discharge limitations set forth in the NPDES Permit as soon as practicable, consistent with its obligations pursuant to NEPA. Such steps will include, but not be limited to, the activities outlined in this section. To the extent the Corps is able to achieve compliance more expeditiously than the timeframes set forth in this FFCA, the Corps shall do so.
20. No later than May 28, 2004, the Corps shall complete an alternatives evaluation and a disposal study. The purpose of the alternatives evaluation and disposal study shall be to identify a range of engineering and/or best management practices that will cause the discharge from the Washington Aqueduct to achieve compliance with the numeric discharge limitations set forth in the NPDES Permit. The Corps shall notify and provide copies to EPA within 30 days of the completion of the alternatives evaluation and disposal study.
21. No later than December 20, 2004, the Corps shall complete and submit to EPA an analysis of the range of engineering and/or best management practices identified by the evaluation and study described in Paragraph 20 that will cause the discharge from the Washington Aqueduct to achieve compliance with the numeric discharge limitations set forth in the NPDES Permit. This analysis may be a free-standing document or may be a draft Environmental Assessment (EA) or draft Environmental Impact Statement (EIS). If the analysis is a free-standing document, the document should be in a format capable of being incorporated into a draft EA or EIS. In preparing this analysis, the Corps shall seek the views of EPA, the National Park Service, United States Fish and Wildlife Service, the National Marine Fisheries Service, the District of Columbia, representatives of the District of Columbia Advisory Neighborhood Commissions, the Wholesale Customers, other interested parties and members of the public. Engineering/best management practices that shall be considered as part of this analysis include, but shall not be limited to, the collection, concentration and transport of sediments from the Georgetown sedimentation basins to the Dalecarlia property, off-site disposal options and other changes of procedure to achieve compliance with the numeric discharge limits set forth in the NPDES Permit.
22. No later than June 3, 2005, the Corps shall identify in a notice to EPA the engineering/best management practices it will implement in order to achieve compliance with the numeric discharge limitations set forth in the NPDES Permit and a schedule for implementing the identified engineering/best management practices as expeditiously as

practicable, consistent with best engineering judgment. The schedule shall include major milestones, including selection of a contractor, preliminary design, and final design, as well as the construction phase. The schedule shall achieve compliance with the numeric discharge limitations set forth in the NPDES Permit at one or more of the sedimentation basins no later than March 1, 2008, and to achieve full compliance with the numeric discharge limitations at all basins no later than December 30, 2009.

23. EPA shall notify the Corps within thirty (30) days of receiving the schedule described in Paragraph 22 above whether EPA agrees that the schedule represents the most expeditious practicable schedule consistent with best engineering judgment. Upon agreement between EPA and the Corps regarding the schedule, the schedule will be incorporated automatically into this FFCA. To the extent the Corps and EPA disagree regarding the schedule described in Paragraph 22 above, the Parties shall utilize the Conflict Resolution procedures described in Paragraphs 37-46 herein. During the Conflict Resolution process, the Corps shall proceed with implementing the engineering/best management practices necessary to achieve compliance with the numeric discharge limitations set forth in the NPDES Permit as expeditiously as practicable but in no case shall the Corps proceed less expeditiously than the the schedule described in Paragraph 22 above.
24. The Corps will exercise its best efforts to satisfy all requirements of NEPA consistent with the timeframes provided herein.
25. The Corps agrees that it shall immediately comply with all effective provisions of the NPDES Permit (including the prohibitions on discharges during the Spring Spawning Season) other than the numeric discharge limitations described in Exhibit B. In addition, until such time as the Corps has fully implemented all engineering/best management practices necessary to achieve compliance with the numeric discharge limitations set forth in the NPDES Permit, the Corps agrees that it shall not discharge through Outfall 002 (discharge from Dalecarlia Sedimentation Basin Nos. 1,2,3 and 4), unless the flow in the Potomac River is equal to or greater than 800 million gallons per day (mgd) as measured at the gauge station at Little Falls (2.64 feet in river elevation). Until such time as the Corps has fully implemented all engineering/best management practices necessary to achieve compliance with the numeric discharge limitations set forth in the NPDES Permit, the Corps agrees that it shall not discharge through Outfall 003 (discharge from Georgetown Sedimentation Basins Nos. 1 and 2) and Outfall 004 (discharge from Georgetown Sedimentation Basin No. 1), unless the flow in the Potomac River is equal to or greater than 1500 million gallons per day (mgd) as measured at the gauge station at Little Falls (2.90 feet in river elevation).
26. Until such time as the Corps has fully implemented all engineering/best management practices necessary to achieve compliance with the numeric discharge limitations set forth in the NPDES Permit, the Corps agrees that it shall increase the duration of the discharge

(which includes a step of an initial draining of flocculent/sediment-laden water and a step that is a final flushing of remaining flocculent/sediment) from Outfalls 003 and 004 to a minimum of thirty-six (36) hours per basin, with each discharge step at a constant rate on an hourly basis. The 36-hour period represents double the 18-hour period that is the current practice of the Corps. The Corps agrees to exercise best efforts, taking into consideration the projected flow rate of the river, its obligations under the Safe Drinking Water Act, and customer demand, to increase the duration of the discharge (which includes both above-described steps) from Outfalls 003 and 004 to 48 hours per basin, with each discharge step at a constant rate on an hourly basis. In addition, the Corps agrees to increase the amount of untreated process water that is used to flush and clean each of the Georgetown sedimentation basins to twice the amount used for each cleaning in calendar year 2001 (which, for Georgetown Basin No. 1, will be a new minimum of 3 million gallons, and for Georgetown Basin No. 2 will be a new minimum of 5 million gallons). Any upset or bypass that occurs at the Washington Aqueduct shall be governed by the upset and bypass provisions of Part II, Section B of the NPDES Permit. Provided that all other provisions of Part II, Section B of the NPDES Permit applicable to a bypass are satisfied, the diversion of waste streams from any portion of the treatment facilities includes an inability to control the timing of a discharge. Any bypass subject to Part II, Section B.3.b. of the NPDES Permit ("Bypass not exceeding limitations") shall comply with the numeric effluent limitations set forth in Exhibit B. Provided that all other provisions of Part II, Section B of the NPDES Permit applicable to an upset are satisfied, an upset may include a discharge that results from the inability to control the timing of a discharge. During any upset or bypass that occurs during the spring spawning season, the Corps shall use best efforts to slow the rate of flocculent/sediment discharge from Outfalls 003 and 004 to seventy-two (72) hours per basin.

27. The Corps agrees that it shall notify EPA, the District of Columbia Department of Health, and the Office of the Superintendent of the Chesapeake and Ohio Canal National Historical Park both orally (which may include by voice message) and in writing (which may include facsimile or electronic mail) at least twelve (12) hours in advance of any discharge from Outfalls 002, 003 and 004. The Corps agrees that it shall notify the District of Columbia Department of Health and the Superintendent of the Chesapeake and Ohio Canal National Historical Park both orally (which may include by voice message) and in writing (which may include facsimile or electronic mail) at least forty-eight (48) hours in advance of any discharge from Outfalls 006 and 007.
28. The Corps' officers, agents, contractors, servants, employees, successors, assigns, and all persons, departments, agencies, firms and corporations in active concert or participation with them shall take all necessary steps to ensure compliance with provisions of the Agreement. As long as this FFCA is in effect, the Corps shall give written notice of this Agreement to any prospective successor in interest and EPA at least ninety (90) calendar days prior to transfer of ownership or operation of the Facility.

29. In any action to enforce this Agreement, the Corps agrees that it shall not raise as a defense the avoidable failure of any of its officers, agents, servants, employees, successors, or assigns, within the scope of their employment, to take all actions necessary to comply with this Agreement. To the extent within its control or the control of its officers, agents, servants, employees, successors, or assigns, as recognized by federal law, the Corps agrees that it shall not raise as a defense the avoidable failure of its contractors, or of any other persons, departments, agencies, firms or corporations in active concert or participation with them, to take all actions necessary to comply with this Agreement.

IV. REPORTING

30. The Corps shall submit a written status report to EPA no later than sixty (60) calendar days after the end of each fiscal year quarter. The status report shall be submitted in addition to any other reporting or certification required under this Agreement or pursuant to law, regulation, or the Permit. The status report shall state and describe the cause of any failure to comply with this Agreement and at a minimum shall include: (1) the deadlines and other milestones which the Corps was required to meet during the reporting period; (2) the progress it made toward meeting them; (3) the reasons for any noncompliance; and (4) a description of any matters relevant to the status of its compliance with this Agreement.
31. Notification to EPA of any noncompliance with any provision of the Agreement or anticipated delay in performing any obligation under the Agreement shall not excuse the Corps' noncompliance or anticipated delay.
32. Unless specified otherwise, when written notification to or communication with EPA is required by the terms of the Agreement, it shall be addressed as follows:

Chief
NPDES Branch (3WP31)
Office of Compliance and Enforcement
Water Protection Division
U.S. EPA Region III
1650 Arch Street
Philadelphia, PA 19103

33. Each notification or communication to EPA shall be deemed submitted on the date it is postmarked, and shall be sent by certified mail, return receipt requested. The Corps shall maintain records of each notification or communication for the duration of the Agreement.
34. All submissions provided pursuant to this Order shall be signed by a duly authorized representative of the Corps who has personal knowledge of the submission's contents.

Each submission shall be admissible as evidence in any proceeding to enforce this Agreement. Each submission shall include the following certification:

"I certify that the information contained in or accompanying this submission is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

VII. COMPLIANCE WITH OTHER LAWS AND REGULATIONS

35. Compliance with the terms of this Agreement in no way affects or relieves the Corps of its obligation to comply with all applicable requirements of the Act, and regulations promulgated thereunder, or other applicable requirements of Federal, state, or local law.

VIII. RIGHT OF ENTRY

36. EPA, its contractors, and other authorized representatives shall have the right to enter the Washington Aqueduct to conduct any inspection, including but not limited to record inspection, sampling testing, or monitoring they believe is necessary to determine the Corps' compliance with the Agreement.

X. CONFLICT RESOLUTION

37. In the event of any conflict involving violations of this Agreement, US EPA and the Corps shall meet promptly and work in good faith in an effort to reach a mutually agreeable resolution of the dispute.
38. Except as specifically set forth elsewhere in this Agreement, if a dispute arises under this Agreement, the procedures of this Section shall apply. In addition, during the pendency of any dispute, the Corps agrees that it shall continue to implement those portions of this Agreement which are not in dispute.
39. The pendency of any dispute under this Section shall not affect the Corps' responsibility to perform the work required by this Agreement in a timely manner, except that the time period for completion of work affected by such dispute may, at EPA's sole discretion, be extended for a period of time not to exceed the actual time taken to resolve any good faith dispute in accordance with, the procedures specified herein. All elements of the work required by this Agreement which are not affected by the dispute shall continue and be completed in accordance with applicable schedule.
40. The Parties to this Agreement shall make reasonable efforts to informally resolve disputes at the Project Manager or immediate supervisor level. With respect to EPA, "Project

Manager" means the Chief, NPDES Branch, Water Protection Division, EPA Region III, or any duly identified successor. With respect to the Corps, "Project Manager" means the Chief, Planning and Engineering Branch, Washington Aqueduct or any duly identified successor. If resolution cannot be achieved informally, the procedures of this Section shall be implemented to resolve a dispute.

41. Within fourteen (14) days after any action which leads to or generates a dispute, the Corps shall submit to EPA a written statement of dispute setting forth the nature of the dispute, the Corps' position with respect to the dispute, and the information the Corps is relying upon to support its position. If the Corps does not provide such written statement to EPA within this fourteen (14) day period, the Corps shall be deemed to have agreed with EPA's position with respect to the dispute.
42. Upon EPA receipt of the written statement of dispute from the Corps, the Parties shall engage in dispute resolution among the Project Managers and/or (their immediate supervisors). The Parties shall have fourteen (14) days from the receipt by EPA of the written statement of dispute to resolve the dispute. During this period, the Project Managers shall meet or confer as many times as necessary to discuss and attempt resolution of the dispute. To the extent appropriate, the Project Managers may meet with and consider the views of the Wholesale Customers. If agreement cannot be reached on any issue within this fourteen (14) day period, the Corps may, within ten (10) days after the conclusion of the fourteen (14) days dispute resolution period, submit a written notice to EPA elevating the dispute to the Dispute Resolution Committee ("DRC") for resolution. If the Corps does not elevate the dispute to the DRC within this ten (10) day period, the Corps shall be deemed to have agreed with EPA's position with respect to the dispute.
43. The DRC will serve as a forum for resolution of disputes for which agreement has not been reached pursuant to the foregoing paragraphs in this Section. Following elevation of a dispute to the DRC, the DRC shall have thirty (30) days to unanimously resolve the dispute. The US EPA representative on the DRC is the Director, Water Protection Division, EPA Region III. The Corps' designated member is the Chief, Washington Aqueduct. Delegation of the authority from a Party's representative on the DRC to an alternate shall be provided to the other Party in writing within seven (7) days of delegation.
44. If unanimous resolution by the DRC is not achieved within this thirty (30) day period, the Corps may, within twenty-one (21) days after the conclusion of the thirty (30) day dispute resolution period, submit a written Notice of Dispute to the Regional Administrator of U.S. EPA Region III for final resolution of the dispute. In the event that the dispute is not elevated to the Regional Administrator of U.S. EPA Region III within the designated twenty-one (21) day period, the Corps shall be deemed to have agreed with the original EPA position with respect to the dispute.

45. Within twenty-one (21) days of resolution of a dispute pursuant to the procedures specified in this Section, the Corps shall incorporate the resolution and final determination into the appropriate statement of work, plan, schedule, or procedures and proceed to implement this Agreement according to the amended statement of work, plan, schedule, or procedures.
46. Resolution of a dispute pursuant to this Section of the Agreement constitutes a final resolution of any dispute arising under this Agreement. The Parties shall abide by all terms and conditions of any final resolution of dispute obtained pursuant to this Section of the Agreement.

XI. FORCE MAJEURE

47. The Corps' obligations under the Compliance Program section of this Agreement shall be performed as set forth in this Agreement unless performance is prevented or delayed by a force majeure event. For purposes of this Agreement, "force majeure" is defined as any event arising from causes beyond the control of the Corps or of entities controlled by the Corps, including but not limited to contractors and subcontractors, which could not be overcome by the due diligence of the Corps or the entities controlled by the Corps, which delays or prevents the performance of any obligation under this Agreement, including acts of God or war, labor unrest, civil disturbance and any judicial orders which prevent compliance with the provisions of this Agreement. Force majeure shall not include increased costs of performance of any activity required by this Agreement, the failure of the Wholesale Customers to fund any activity necessary to achieve compliance with this Agreement or the failure to apply for any required permits or approvals or to provide all information required therefore in a timely manner, nor shall it include the failure of contractors or employees to perform or the avoidable malfunction of equipment.
48. If the Corps is having difficulty meeting its obligations as set forth in this Agreement due to a force majeure event, it shall notify EPA promptly by telephone of any change in circumstances giving rise to the suspension of performance or the nonperformance of any obligation under this Agreement. In addition, within fourteen (14) days of the occurrence of circumstances causing such difficulty, it shall provide a written statement to EPA of the reason(s), the anticipated duration of the event and delay, the measures taken and to be taken to prevent or minimize the time and effects of failing to perform or delaying any obligation, and the timetable for the implementation of such measures. Failure to comply with the notice provisions shall constitute a waiver of any claims of force majeure. The Corps shall take all reasonable steps to avoid and/or minimize any such delay.
49. The burden of proving that any delay is caused by circumstances beyond the control of the Corps shall rest with the Corps.

XII. MODIFICATIONS

50. The requirements, timetable and deadline under this Agreement may be modified upon receipt of a timely request for modification and when good cause exists for the requested modification. Any request for modification by the Corps shall be submitted in writing and shall specify: the requirement, timetable or deadline for which a modification is sought; the good cause for the extension; and any related requirement, timetable, deadline or schedule that would be affected if the modification were granted.
51. Good cause exists for a modification when sought in regard to: a force majeure event; a delay caused, or which is likely to be caused, by the grant of an extension in regard to another timetable and deadline or schedule; a delay caused by failure of a regulatory agency to perform its duties in a timely manner where regulatory action is necessary to proceed with construction and where the Corps has made a timely and complete request for action from the regulatory agency; acceptable scientific data exists which demonstrates that another requirement, deadline or timetable would be adequate to achieve the numeric discharge limitations set forth in the NPDES Permit, protect water quality and achieve the goals of the Clean Water Act; and other event or series of events mutually agreed to by the Parties and constituting good cause.
52. Within twenty-one (21) calendar days of receipt of a request for a modification, EPA shall advise the Corps of its position on the request. If EPA does not concur in the modification, it shall include in its statement of nonconcurrence an explanation of the basis for its position.
53. In the event that the NPDES Permit is modified, through appeal, completion of ongoing consultation between EPA and the National Marine Fisheries Service, or otherwise, EPA and the Corps agree to negotiate modifications to this FFCA to the extent necessary for the Corps to achieve compliance with the discharge limitations in the final NPDES Permit pursuant to a schedule as consistent as practicable with the one set forth in this FFCA.

XIII. FUNDING

54. It is the expectation of the Parties to this Agreement that all obligations of the Corps will be fully funded. The Corps agrees to use every legally available mechanism to seek sufficient funding to fulfill its obligations under the Agreement.
55. Provision herein shall not be interpreted to require obligations or payment of funds in violations of the Anti-Deficiency Act, 31 U.S.C. § 1341. In cases where payment or obligation of funds would constitute a violation of the Anti-Deficiency Act, the dates established requiring the payment or obligation of such funds shall be appropriately adjusted within the terms delineated in this Agreement.

If funds are not available to fulfill the Corps' obligations under this Agreement, EPA reserves the right to initiate an action against any other person, or to take any action which would be appropriate absent this agreement.

XIV. GENERAL PROVISIONS

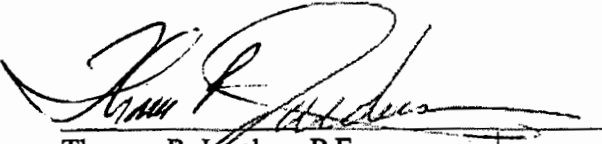
57. The Parties agree that the terms and conditions of this Agreement are enforceable as appropriate by any person pursuant to Section 505 of the Act, 33 U.S.C. § 1365. Terms and conditions of this Agreement changed by an agreed upon modification shall be enforceable as changed. Nothing in this Agreement shall be deemed to waive the sovereign immunity of the United States beyond what is already accomplished in the Clean Water Act.
58. This Agreement was negotiated and executed by the Parties in good faith to ensure compliance with the law. No part of this Agreement constitutes or should be interpreted or construed as an admission of fact or of liability under federal, state or local laws, regulations, ordinances, or common law or as an admission of any violations of any law, regulations, ordinances, or common law. By entering into this Agreement, the Corps does not waive, other than as to the enforcement of this Agreement pursuant to the terms contained herein, any claim, right, or defense that it might raise in any other proceeding or action.
59. If any provision or authority of this Agreement or the application of this Agreement to any party or circumstance is held by any judicial or administrative authority to be invalid, the application of such provisions to other parties or circumstances and the remainder of the Agreement shall remain in force and shall not be affected thereby.
- The effective date of this Agreement shall be the date on which it is signed by the last signatory.
61. This Agreement shall be effective if signed in counterparts.
62. In computing any period of time described as "days" herein, all references to "days" refer to "calendar days." The last day of a time period shall be included, unless it is a Saturday, a Sunday or a legal holiday, in which event the period runs until the end of the next day that is not a Saturday, a Sunday or a legal holiday.

63. This Agreement shall terminate once the Corps has met all of its obligations herein, as determined by the mutual consent of the Parties and evidenced in writing.

Date

June 11, 2003
Date

Jon M. Capacasa, Director
Water Protection Division
US EPA Region III



Thomas P. Jacobus, P.E.
General Manager
Washington Aqueduct
U.S. Army Corps of Engineers

63. This Agreement shall terminate once the Corps has met all of its obligations herein, as determined by the mutual consent of the Parties and evidenced in writing.

June 12, 2003
Date

Jon M. Capacasa
Jon M. Capacasa, Director
Water Protection Division
US EPA Region III

Date

Thomas P. Jacobus, P.E.
General Manager
Washington Aqueduct
U.S. Army Corps of Engineers

ACTION: Notice of Advisory Committee Meeting Cancellations.

SUMMARY: On Thursday, September 11, 2003 (68 FR 53597) the Department of Defense announced closed meetings of the Defense Science Board Task Force on Patriot Systems Performance. The meetings scheduled for January 7–8, 2004, were cancelled.

Dated: January 5, 2004.

Patricia L. Toppings,
Alternate OSD Federal Register Liaison
Officer, Department of Defense.
[FR Doc. 04–506 Filed 1–9–04; 8:45 am]
BILLING CODE 5001–06–M

DEPARTMENT OF DEFENSE

Office of the Secretary

Strategic Environmental Research and Development Program, Scientific Advisory Board

AGENCY: Department of Defense.

ACTION: Notice.

SUMMARY: In accordance with section 10(a)(2) of the Federal Advisory Committee Act (Pub. L. 92–463), announcement is made of the following Committee meeting:

DATES: March 30, 2004 from 0800 a.m. to 12:10 p.m.; March 31, 2004 from 0800 a.m. to 15:30 p.m. and April 1, 2004 from 0800 a.m. to 12:45 p.m.

ADDRESSES: The Shelter Pointe Hotel and Marina, 1551 Shelter Island Drive, San Diego, CA 92106.

FOR FURTHER INFORMATION CONTACT: Ms. Veronica Rice, SERDP Program Office, 901 North Stuart Street, Suite 303, Arlington, VA or by telephone at (703) 696–2119.

SUPPLEMENTARY INFORMATION:

Matters To Be Considered

Research and Development proposals and continuing projects requesting Strategic Environmental Research and Development Program funds in excess of \$1M will be reviewed.

The meeting is open to the public. Any interested person may attend, appear before, or file statements with the Scientific Advisory Board at the time and in the manner permitted by the Board.

Dated: January 5, 2004.

Patricia L. Toppings,
Alternate OSD Federal Register Liaison
Officer, Department of Defense.
[FR Doc. 04–507 Filed 1–9–04; 8:45 am]
BILLING CODE 5001–06–M

DEPARTMENT OF DEFENSE

Department of the Army; Corps of Engineers

Intent To Prepare a Draft Environmental Impact Statement for a Proposed Water Treatment Residuals Management Process for the Washington Aqueduct, Washington, DC

AGENCY: Department of the Army, U.S. Army Corps of Engineers, DOD.

ACTION: Notice of intent.

SUMMARY: The Washington Aqueduct seeks to plan and create a water treatment residuals management process that will comply with the standards established in National Pollutant Discharge Elimination System (NPDES) Permit DC0000019 and will allow for continued safe, reliable, and cost effective production of drinking water. Washington Aqueduct generates residual solids, a byproduct of producing drinking water, and currently periodically discharges this material to the Potomac River. The residuals consist of river sediment and solid materials generated by adding coagulant as part of the drinking water treatment process. NPDES Permit DC0000019 includes effluent standards for the discharge of the water treatment residuals that cannot be achieved by the current Washington Aqueduct residual management process.

This notice advises the public that pursuant to Section 102(2)(c) of the National Environmental Policy Act (NEPA) of 1969, as amended, Washington Aqueduct, which operates the Dalecarlia and McMillan Water Treatment Plants, will prepare a combined Feasibility Study/Draft Environmental Impact Statement. The combined studies will identify, analyze, and evaluate alternatives for reducing or eliminating the discharge of water treatment residuals from the Dalecarlia Water Treatment Plant and Georgetown Reservoir to the Potomac River in order to comply with NPDES Permit DC0000019, effective April 15, 2003, and a Federal Facility Compliance Agreement, signed June 12, 2003. In addition, Washington Aqueduct will consider alternate methods of managing the Potomac River sediment that accumulates in the Dalecarlia Reservoir. **DATES:** A public scoping meeting will be held on Wednesday, January 28, 2004 between 7 and 9 p.m. at St. Patrick's Episcopal Church and Day School, 4700 Whitehaven Parkway, NW., Washington, DC 20007–1586. Directions are available at <http://>

washingtonaqueduct.nab.usace.army.mil.

FOR FURTHER INFORMATION CONTACT: Questions about the proposed action and the Draft Environmental Impact Statement (DEIS) can be addressed to: Michael C. Peterson, (202) 764–0025, michael.c.peterson@usace.army.mil, Environmental Engineer, Washington Aqueduct Division, Baltimore District, U.S. Army Corps of Engineers, 5900 MacArthur Boulevard, Washington, DC 20016.

SUPPLEMENTARY INFORMATION:

1. Background

Washington Aqueduct operates the Dalecarlia and McMillan Water Treatment Plants in Washington, DC, which provide potable water to over one million persons in the District of Columbia and Northern Virginia. Raw water diverted from the Potomac River is collected in the Dalecarlia Reservoir, where river sediment settles naturally. The sediment periodically dredged from the Dalecarlia Reservoir is not returned to the Potomac River.

Raw water flows from the Dalecarlia Reservoir to the Dalecarlia Water Treatment Plant and also via the Georgetown Reservoir to the McMillan Water Treatment Plant. Aluminum sulfate, the chemical used for coagulation, is added from the Dalecarlia Plant to the raw water for both the Dalecarlia and McMillan Water Treatment Plants. Chemically included sedimentation takes place in four basins at the Dalecarlia Water Treatment Plant and two basins at the Georgetown Reservoir. The Dalecarlia facility employs 36 rapid dual media filters and the McMillan facility is equipped with 12 rapid dual media filters. Except for the filter backwash water at the McMillan Water Treatment Plant, which is recycled to the McMillan Reservoir, and the filter backwash water at the Dalecarlia Water Treatment Plant, which is recycled to the Dalecarlia Reservoir, all sedimentation residuals are currently returned to the Potomac River.

2. Regulatory Mandate

In the recently issued NPDES permit, the Environmental Protection Agency has significantly reduced the allowable concentration of residuals that Washington Aqueduct can discharge to the Potomac. This change in the permit requires Washington Aqueduct to evaluate alternate methods of residuals collection, processing, conveyance, and disposal. Washington Aqueduct and Environmental Protection Agency Region III entered into a Federal Facility

Compliance Agreement to allow Washington Aqueduct to continue to produce drinking water while developing and implementing a new residuals management process. The Federal Facilities Compliance Agreement contains deadlines for various compliance milestones including the following NEPA documents (deadline in parentheses):

- Description of Proposed Actions and Alternatives submitted to Environmental Protection Agency Region III (May 28, 2004)
- Draft Environmental Impact Statement submitted to Environmental Protection Agency Region III (December 20, 2004)
- Final Record of Decision submitted to Environmental Protection Agency Region III (June 3, 2005)

3. Objectives of Proposed Action

The objectives of the proposed residuals management process are as follows, not necessarily in order of precedence (measurement indicators in parentheses):

- To allow Washington Aqueduct to achieve complete compliance with NPDES Permit DC00000019 and all other federal and local regulations.
- To design a process that will not impact current or future production of safe drinking water reliably for the Washington Aqueduct customers. (Peak design flow of drinking water)
- To reduce, if possible, the quantity of solids generated by the water treatment process through optimized coagulation or other means. (Mass or volume of solids generated)
- To minimize, if possible, impacts on various local or regional stakeholders and minimize impacts on the environment. (Traffic, noise, pollutants, etc.)
- To design a process that is cost-effective in design, implementation, and operation. (Capital, operations, and maintenance expenses)

4. Alternatives

Various alternatives will be considered that include, but are not limited to, different methods of collection, processing, conveyance, and disposal of the residuals as well as the no action alternative. Processing will be evaluated at both onsite and offsite facilities. Conveyance and disposal options are anticipated to include discharging to the sewer, barging to a remote processing or disposal site, trucking to a remote disposal site, pumping to a remote processing facility, and dewatering onsite and disposing in a dedicated monofill.

The alternatives evaluated in the DEIS will be analyzed in depth in areas to include, but not limited to, predicted changes to air quality, aquatic resources, terrestrial and wetland resources, cultural resources, traffic, solid and toxic waste, and infrastructure as well as any environmental justice concerns. Cumulative, secondary, indirect and other associated impacts will be evaluated.

5. Scoping Process

The participation of all affected and interested federal, state, and local agencies, environmental and neighborhood groups, Indian tribes, and individuals is welcome and encouraged. Anyone wishing to contribute ideas or information may submit a comment to the contact above during the 30 day scoping period that immediately follows the publication of this notice. Alternatively, comments will be collected online at <http://washingtonaqueduct.nab.usace.army.mil>. Comments and other information can also be presented at the public scoping meeting (see DATES).

6. Availability of the DEIS

The Washington Aqueduct anticipates the DEIS will be made available to the public in October 2004.

Dated: January 5, 2004.

Thomas P. Jacobus,
Chief, Washington Aqueduct.
[FR Doc. 04-441 Filed 1-9-04; 8:45 am]
BILLING CODE 3710-41-M

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

Sunshine Act Meeting

Pursuant to the provisions of the "Government in the Sunshine Act" (5 U.S.C. 552b), notice is hereby given of the Defense Nuclear Facilities Safety Board's (Board) meeting described below. The Board will also conduct a series of public hearings pursuant to 42 U.S.C. 2286b and invites any interested persons or groups to present any comments, technical information, or data concerning safety issues related to the matters to be considered.

TIME AND DATE OF MEETING: 9 a.m., February 3, 2004.

PLACE: Defense Nuclear Facilities Safety Board, Public Hearing Room, 625 Indiana Avenue NW., Suite 300, Washington, DC 20004-2001. Additionally, as a part of the Board's E-Government initiative, the meeting will be presented live through Internet video

streaming. A link to the presentation will be available on the Board's Web site (<http://www.dnfsb.gov>).

STATUS: Open. While the Government in the Sunshine Act does not require that the scheduled discussion be conducted in a meeting, the Board has determined that an open meeting in this specific case furthers the public interests underlying both the Sunshine Act and the Board's enabling legislation.

MATTERS TO BE CONSIDERED: The Board has been reviewing the Department of Energy's (DOE) current oversight and management of the contracts and contractors it relies upon to accomplish the mission assigned to DOE under the Atomic Energy Act of 1954, as amended. We will focus on what impact, if any, DOE's new initiatives may have or might have had upon assuring adequate protection of the health and safety of the public and workers at DOE's defense nuclear facilities. The seventh public meeting will collect information needed to understand and address any health or safety concerns that may require Board action. This will include, but is not limited to, presentations by the Department of Energy and the National Nuclear Security Administration (NNSA) to explain their contract management and oversight initiatives.

The Board has identified several key areas that will be examined in public meetings. In the February 3rd meeting, the Board will hear from DOE's Office of Environment, Safety, and Health concerning its roles and responsibilities in the oversight process, and from NNSA regarding its review of applicable lessons learned from the Columbia Accident Investigation Board Report. The Board will continue to explore in more depth Federal management and oversight policies being developed by DOE and NNSA for defense nuclear facilities. The information gathered will explore Federal contract management and oversight experience and will provide relevant reference experience. The public hearing portion is independently authorized by 42 U.S.C. 2286b.

FOR FURTHER INFORMATION CONTACT: Kenneth M. Pusateri, General Manager, Defense Nuclear Facilities Safety Board, 625 Indiana Avenue NW., Suite 700, Washington, DC 20004-2901, (800) 788-4016. This is a toll-free number.

SUPPLEMENTARY INFORMATION: Requests to speak at the hearing may be submitted in writing or by telephone. The Board asks that commentators describe the nature and scope of their oral presentation. Those who contact the Board prior to close of business on February 2, 2004, will be scheduled for

PUBLIC INVOLVEMENT AND AGENCY COORDINATION

- WA MEMORANDA FOR RECORD AND MAILING LISTS –
AGENCY COORDINATION
- PROJECT WEBSITE
- CONSULTATION LETTERS TO AGENCIES
- AGENCY RESPONSES ON ENDANGERED SPECIES ACT
- CONSULTATION LETTERS TO AGENCIES CONCERNING PUBLIC
ALTERNATIVES
- CONSULTATION LETTERS TO AGENCIES CONCERNING DEIS
- AGENCY RESPONSES ON ALTERNATIVES
 - CARDEROCK
 - CIA
 - DC WASA
 - FAIRFAX WATER
 - NATIONAL PARK SERVICE
 - CITY OF ROCKVILLE
- AGENCY RESPONSES ON DEIS

This section only contains copies of letters between the Washington Aqueduct and agencies having specific coordination requirements. Mailing lists of all agency coordination letters are provided. A complete collection of letters can be found in the Administrative Record.

MEMORANDUM FOR RECORD (REVISED 12 SEP 2005)

SUBJECT: Washington Aqueduct Coordination with Agencies for Development of a Draft Environmental Impact Statement for a Proposed Water Treatment Residuals Management Process

1. In January 2004, Washington Aqueduct initiated the development of a Draft Environmental Impact Statement (DEIS) for a proposed water treatment residuals management process. In order to formally seek coordination and information for this DEIS from other agencies and organizations, Washington Aqueduct sent a series of letters to various representatives of these entities. Copies of the letters can be found in the Administrative Record for the DEIS.
2. The initial set of letters (Letter #1), sent in January 2004, included the Notice of Intent to prepare the DEIS, an invitation to the scoping meeting, or in a few instances, the announcement that the scoping meeting had already occurred. The mailing list for Letter #1 can be found at Tab A.
3. The next set of letters (Letter #2), sent in May 2004, included a brief description of the alternatives that were determined to be feasible related to the Project Purpose and Need, and an invitation to a public meeting. The mailing list for Letter #2 can be found at Tab B.
4. A letter was sent to the District of Columbia Water and Sewer Authority Engineering Department in July 2004 requesting documentation and an opportunity to meet and discuss specific engineering issues related to the alternative that involved construction of facilities at the Blue Plains Advanced Wastewater Treatment Plant. Previous meetings had been with a member of the operations staff at Blue Plains.
5. The next set of letters (Letter #3), sent in August 2004, included discussion about the alternatives and the public interest related to the development of the DEIS, and an announcement of the availability of various documents on the project website (Description of Proposed Action and Alternatives, Engineering Feasibility Study, and Scope of Statement). In addition, the letters included an invitation to a public meeting. The mailing list for Letter #3 can be found at Tab C.
6. Also in August, Washington Aqueduct sent several agencies tasked with protection of resources such as natural and historical resources specific letter seeking formal consultation regarding the feasible alternatives and the Scope of Statement. The resources agencies that were sent this letter were as follows: the Chesapeake Field Office of the United States Fish and Wildlife Service; the Protected Resource Division of the National Marine Fisheries Service; the Maryland Department of Natural Resources; the Fisheries and Wildlife Division of the District of Columbia Department of Health; the Maryland State Historic Preservation Officer; the District of Columbia State Historic Preservation Officer. Responses were received from the National Marine Fisheries Service and the Maryland Department of Natural Resources. Subsequent letters to the resource protection agencies were sent in February 2005 that described the alternative that had been added to the original set of alternatives identified as satisfying the Project Purpose and Need. In addition, a third letter was sent on April 4, 2005 to the Chesapeake Field Office of the United States Fish and Wildlife Service in order to reiterate the request for

consultation and information relevant to Section 7 of the Endangered Species Act as well as to seek consultation relevant to the U.S. Fish and Wildlife Coordination Act.

7. Other agencies were sent letters in August seeking coordination meetings or information including: the National Capital Planning Commission; the National Capital Region of the National Park Service; the C&O Canal National Historic Park of the National Park Service; the Bureau of Environmental Quality of the District of Columbia Department of Health; the Attorney General for the District of Columbia; the Solid Waste Management office of the District of Columbia Department of Public Works, the Facility Manager of the Anacostia Naval Station; the Commander of the 11th Civil Engineering Squadron at Bolling Air Force Base.

8. In September, two sets of letters were sent to the agencies and organizations listed at Tab D (Letter #4) and Tab E (Letter #5). These letters discussed the public meeting that was held on September 7 and announced an additional public meeting on September 28.

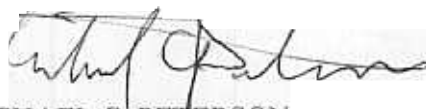
9. Another set of letters (Letter #6) were sent in November 2004 announcing a fifth meeting. The list of agency and organization recipients are at Tab F.

10. In December 2004, two letters were sent to officials in the Department of the Navy regarding a request to consider allowing Washington Aqueduct to use space at the Navy's Carderock facility.

11. Also in December 2004, a letter was sent to the National Capital Region of the National Park Service regarding a request to consider transfer or use of land for Washington Aqueduct near the Dalecarlia Water Treatment Plant in order to construct an access road to Canal Road and the Clara Barton Parkway. Consideration of and comments on an request for an exemption for Washington Aqueduct contracted trucks hauling water treatment residuals on National Park Service roads was also requested. In addition, the consideration of and comments on the potential construction of a facility at the Navy's Carderock facility was requested.

12. In February 2005, in addition to the letters sent to the resource protection agencies as indicated in paragraph 6, letters were sent to the National Capital Planning Commission and Montgomery County Park & Planning of the Maryland-National Capital Park & Planning Commission discussing the alternative that had been added to the original set of alternatives identified as satisfying the Project Purpose and Need

13. Although managers at both the Washington Suburban Sanitary Commission and Fairfax Water had previously indicated via e-mail messages that they would not accept Washington Aqueduct water treatment residuals at their respective facilities, in March 2005, Washington Aqueduct submitted letters to these water utilities, as well as the Central Intelligence Agency, the Federal Highway Administration, and the Public Works Office of the City of Rockville requesting use of their respective facilities.



MICHAEL C. PETERSON
Environmental Engineer

Letter # 1
MFR 13 APRIL 05 - TAB A



DEPARTMENT OF THE ARMY
WASHINGTON AQUEDUCT
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
5900 MACARTHUR BOULEVARD, N. W.
WASHINGTON, D.C. 20016-2514

January 12, 2004

Mr. George Rizzo
Drinking Water Program Manager
Mail Code: 3WP22
U.S. EPA Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Dear Mr. Rizzo

George

Washington Aqueduct must comply with a new permit issued by the Environmental Protection Agency. By significantly reducing the concentration of the sediment and coagulant allowed to be returned to the Potomac River when the sedimentation basins are cleaned, this permit will require a change to the current processes. There will be some effects of this change on the surrounding community and the environment.

Therefore, we are starting to develop new plans to collect, process, transport and dispose of these treatment residuals. We will evaluate processing the residuals at both onsite and offsite facilities. We will evaluate transportation and disposal options including discharging to the sewer, barging to a remote location, pumping or trucking to remote locations, or disposing of the material on-site. The feasible alternatives will be examined in an Environmental Impact Statement that will be prepared this year.

We will hold a public meeting on January 28, 2004 to acquaint all interested parties with our planning and analytical process. We plan to do this in a setting that will allow us to explain the nature of the project in great detail. We also will provide an opportunity for those who attend to offer comments to become part of the administrative record of this project.

I invite you to attend to learn more about the project and to provide us with your comments, concerns, and ideas. Throughout the project we will be welcoming input from concerned members of the public, elected officials, and regulatory agencies.

The meeting details are:

Wednesday, January 28, 2004, 7:00 pm to 9:00 pm
St. Patrick's Episcopal Church and Day School
4700 Whitehaven Parkway, Washington, DC 20007-1586

Directions are available at <http://washingtonaqueduct.nab.usace.army.mil>.

Additional information about the project is provided in the attached Notice of Intent.

Sincerely,


Thomas P. Jacobus
General Manager

Attachment



DEPARTMENT OF THE ARMY
WASHINGTON AQUEDUCT
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
5900 MACARTHUR BOULEVARD, N. W.
WASHINGTON, D.C. 20016-2514

January 12, 2004

Mr. Joe Fletcher
Fletcher's Boat House, Inc
4940 Canal Road, N.W.
Washington, DC 20007

Dear Mr. Fletcher:

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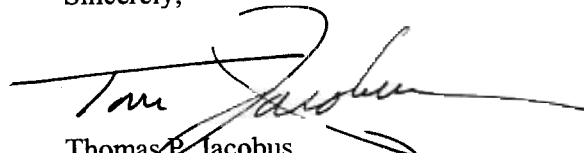
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Sincerely,


Thomas P. Jacobus
General Manager

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D.C. Department of Public Works
2000 14th Street, NW
Washington, DC 20001

Mr. Dan Tangherlini, Director
D.C. Department of Transportation
2000 14th Street, NW, 6th Floor
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Mr. Tom Henderson, Administrator
Solid Waste Management
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2000 14th Street, NW
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Mr. Ira Palmer, Branch Chief
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Mr. Jerry N. Johnson
General Manager
D.C. Water and Sewer Authority
5000 Overlook Avenue, SW
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Mr. Neil O. Albert, Director
D.C. Parks and Recreation Department
3149 16th Street, NW
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Mr. Eric W. Price
Office of the Deputy Mayor for Planning
and Economic Development
John A. Wilson Building
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Mr. James R. Collier, P.E.
Chief, Bureau of Environmental Quality
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Mr. Donald Wambsgans, Program Manager
Air Quality Division
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Ms. Cheryl Amisial
Program Manager
Soil Resources Management
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Mr. John Wolflin, Field Supervisor
Chesapeake Bay Field Office
U.S. Fish and Wildlife Service
177 Admiral Cochrane Drive
Annapolis, MD 21401

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Ms. Mary Colligan
Assistant Regional Administrator
Protected Resource Division
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Chairman Subcommittee on National Parks,
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Mr. Daniel McKeever
City Manager
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Honorable Daniel E. Gardner
Mayor, City of Falls Church
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Advisory Council on Historic Preservation
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Virginia Department of Environmental
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Richmond, Virginia 23219

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Western Avenue Citizens Association
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Chief Operating Officer
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Washington, DC 20009



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Calvert Station
Washington, DC 20007

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Councilmember Ward 1
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Mr. Raymond Roach
Washington DC Regional Office
Natural Resources Defense Council
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Washington, DC 20008

Mr. Rob Gordon, Executive Director
National Wilderness Institute
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Washington, D.C. 20007

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Palisades Station
Washington, DC 20016

Mr. David Brewster
Office of Maryland Senator Brian Frosh
446 Miller Senate Office Building
Annapolis, MD 21401-1991

Honorable Jim Moran
United States House of Representatives
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Washington, DC 20515-4608

Mr. John Finney, Chair
ANC 3D Commissioner
5275 Watson Street, NW
Washington, DC 20016

Ms. Kathy Patterson
Councilwoman Ward 3
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Dr. Hamid Karimi, Program Manager
Watershed Protection Division
D.C. Department of Health
51 N Street, NE, 5th floor
Washington, DC 20002

Mr. George S. Rizzo
Drinking Water Program Manager
Mail Code: 3WP22
U.S. EPA Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Mr. Charles H. Atherton, Secretary
U.S. Commission of Fine Arts
National Building Museum
401 F Street, NW, Suite 312
Washington, DC 20001-2728

Ms. Brenda Creel
Acting General Manager
for Environmental Services
City of Falls Church
300 Park Avenue
Falls Church, VA 22046

Letter # 2
MFR 13 APRIL 05 - TAB B



DEPARTMENT OF THE ARMY
WASHINGTON AQUEDUCT
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
5900 MACARTHUR BOULEVARD, N. W.
WASHINGTON, D.C. 20016-2514

May 18, 2004

Office of the General Manager

Honorable Chris Van Hollen
United States House of Representatives
1419 Longworth House Office Building
Washington, DC 20515

Dear Mr. Van Hollen

We would like to invite you or a member of your staff to a meeting we will hold on Wednesday, May 26 from 7:00 pm to 9:00 pm at Sibley Memorial Hospital, Ernst Auditorium. The purpose of this meeting is to give an update on the work we have done to identify feasible alternatives that will meet our requirement for a proposed water treatment residuals management process. Earlier this year, we sent you our Notice of Intent to prepare a Draft Environmental Impact Statement to analyze the various alternatives to satisfy this requirement. This requirement stems from a National Pollutant Discharge Elimination System Permit issued to us by the United States Environmental Protection Agency.

Using historical information, new engineering approaches, and ideas from the public we identified a total of 26 alternatives for collecting, processing, transporting and disposing of our treatment residuals. We identified alternatives that involved both on-site and off-site processing and in so doing identified varying amounts of truck traffic. Using our screening criteria we have determined that three alternatives should move forward for complete assessment through the use of the formal procedure of the Environmental Impact Statement (EIS). We eliminated alternatives that would cause us to miss our compliance deadline set by EPA, threaten our ability to reliably produce drinking water, use unproven or technically infeasible technology, or were too expensive.

The three alternatives that emerged from the screening process are:

- Process the residuals on the property of the Dalecarlia Treatment Plant and truck them to an offsite disposal location.
- Create and dispose of the residuals in a monofill on the Dalecarlia Reservoir property.
- Construct a pipeline to the Blue Plains Wastewater Treatment Plant in the District of Columbia and combine them with solids entering their dewatering facility.

In addition, we are required by law to evaluate the "no action" alternative.

Each of these alternatives will now be carefully evaluated in an EIS. The EIS will help all interested parties understand the full range of potential impacts from each alternative and give all parties an opportunity for formal comment.

If you have any questions please contact Mr. Michael Peterson at 202-764-0025

Sincerely,

Thomas P. Jacobus
General Manager

Ms. Leslie A. Hotaling, Director
D.C. Department of Public Works
2000 14th Street, NW
Washington, DC 20001

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Letter # 3
MFR 13 APRIL 05 - TAB C



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WASHINGTON AQUEDUCT
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
5900 MACARTHUR BOULEVARD, N.W.
WASHINGTON, D.C. 20016-2514

August 12, 2004

Office of the General Manager

Mr. Robert M. Summers, Director
Water Management Administration
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore, MD 21230

Dear Mr. Summers:

Washington Aqueduct will be changing the way we have historically disposed of the solids that collect in the sedimentation basins at the Dalecarlia water treatment plant and the basins at Georgetown. I wanted to update you on the progress we are making as we analyze and subsequently select a preferred alternative for construction.

As you may know, we are operating under a Federal Facility Compliance Agreement issued by the United States Environmental Protection Agency Region III. That agreement and the accompanying National Pollutant Discharge Elimination System permit will cause us to completely cease returning the solids to the Potomac River by December 31, 2009. While that seems like a long time in the future, most of this time will be required for the construction of facilities and procurement of equipment.

We are at the stage where we have identified three feasible alternatives that currently match our screening criteria as well as the project purpose and need. The criteria include meeting the terms and conditions of the permit and compliance agreement, preserving the reliability and redundancy of the existing water production system and considering the economic effects of the various options.

We are beginning to acquire data for the Draft Environmental Impact Statement to evaluate these feasible alternatives. All of the environmental resources such as air quality, land use, noise, socioeconomic, transportation, etc. are included in this data acquisition process. We know that the collection, transport and disposal of the solids is going to change the way we currently operate and that both immediate neighbors as well as other stakeholders have an interest in not only the decision we make, but also the process we use to arrive at that decision.

Therefore, we are holding a public meeting that we have designed to provide up to date information on our progress and process. The first part of the meeting will be an open house where members of Washington Aqueduct staff and its consultants will be available with displays and will be prepared to answer questions. That portion will be followed by a group meeting to summarize the material and address issues you may have. The meeting will be held on September 7, 2004 at the Dalecarlia Water Treatment Plant at 5900 MacArthur Boulevard, NW, Washington D.C. The meeting will start at 6:30 pm, and we expect to conclude at 9:00 pm.

From a number of inquiries we have received, I believe that some individuals may have gotten the impression that a decision on which course of action to pursue has already been made. That is not correct. We are working with three options that achieve compliance with our permit in ways that have different measurable effects on peoples' lives and the environment.


One option involves local processing and hauling via commercial trucks to a disposal site outside the immediate area, such as farmlands. Another option will analyze an alternative to trucking the solids through the neighborhoods. This is the option that would essentially build a hill adjacent to the Dalecarlia Reservoir on land owned by Washington Aqueduct. The third option will analyze a smaller local collection and treatment facility and a pipeline in the trace of the major sewer that goes in the immediate vicinity of the Dalecarlia water treatment plant to the Blue Plains advanced wastewater treatment plant. The solids would then be disposed of along with the existing biosolids that are trucked daily from Blue Plains.

I have included with this letter a more detailed description of each alternative we plan to study as well as additional background on the project. Other documents are available on our project website at <http://washingtonaqueduct.nab.usace.army.mil/aqueduct.htm> such as the Description of Proposed Action and Alternatives, the Engineering Feasibility Study, and the recently completed Scope of Statement.

We plan to complete the Draft Environmental Impact Statement by mid-November and it will be available to the public for formal comment. It will contain the preferred alternative with the supporting rationale.

If you or a member of your staff cannot attend the September 7 meeting, you may send us your comments via our website or you may write to us at 5900 MacArthur Boulevard, Washington, DC 20016, Attention: Michael Peterson.

Sincerely,



Thomas P. Jacobus
General Manager

Enclosure

Washington Aqueduct Residuals Processing Alternatives

The Washington Aqueduct operates the Dalecarlia and McMillan water treatment plants in Washington, D.C., serving over one million persons in the District of Columbia and Northern Virginia area with potable water. The treatment process adds coagulant to remove solid particles (river silt) from the water withdrawn from the Potomac River, filters and disinfects the water, and distributes the finished water to the metropolitan service area. The solids generated during the treatment process have historically been returned to the Potomac River, but a recently reissued version of Washington Aqueduct's National Pollutant Discharge Elimination System permit (Permit No. DC 0000019) effectively precludes the return of the of water treatment solids to the river.

Consequently, Washington Aqueduct is in the process of evaluating water treatment residuals management options to minimize or eliminate the discharge of residuals to the Potomac River. The residuals management option that will ultimately be selected has the potential to affect the human environment, and thus development of the residuals management plan must comply with the National Environmental Policy Act and also Section 106 of the National Historic Preservation Act.

A description of proposed actions and alternatives as well as an engineering feasibility study have been completed. This process has narrowed the list of potential alternatives from 26 alternatives to four, including the no-action alternative. These remaining alternatives will be evaluated in the Draft Environmental Impact Statement that is currently being prepared.

The Draft Environmental Impact Statement will consider a 20-year period of operations. Consequently, residuals quantities and sizing of facilities will be based on anticipated water production over the 20-year period. Similarly, the evaluation of impacts of the alternatives will be based on the 20-year period of examination.

Alternative A: Process Water Treatment Residuals at Dalecarlia Water Treatment Plant and Dispose in a Newly Constructed Dalecarlia Monofill. Process Dalecarlia Reservoir Forebay Residuals by Current Methods and Periodically Haul

Residuals from the Dalecarlia sedimentation basins and the Georgetown sedimentation basins would be collected and thickened/dewatered at the Dalecarlia water treatment plant before being disposed of in a newly constructed Dalecarlia monofill. Residuals from the Dalecarlia Reservoir forebay would be processed separately as is currently practiced and periodically hauled offsite or could also be disposed of in the Dalecarlia monofill.

Facilities. Sedimentation basins at Dalecarlia and Georgetown would be upgraded. A residuals thickening and dewatering facility has been preliminarily located west of the Capital Crescent Trail as it passes through the Dalecarlia water treatment plant. The approximate location of the monofill is between the Dalecarlia Reservoir and the Dalecarlia Parkway. As currently conceived, the monofill would rise approximately 50 feet from ground level on the Dalecarlia Parkway side and 80 feet on the Dalecarlia Reservoir side. For comparison, the existing trees in that area are in the range of 100 feet tall. The monofill would occupy about 30 acres.

Conveyance and Transport. Pipelines would convey coagulated residuals from both the Dalecarlia sedimentation basins and the Georgetown sedimentation basins to the Dalecarlia thickening facility. After thickening and dewatering, the solids would be moved by truck across MacArthur Boulevard to the monofill. On average, six onsite truck trips per day (six days per week) would be required.

Alternative B: Process Water Treatment Residuals at the Dalecarlia Water Treatment Plant and Dispose via Contract Hauling. Process Dalecarlia Reservoir Forebay Residuals by Current Methods and Periodically Haul

This alternative consists of thickening and dewatering water treatment residuals at the Dalecarlia water treatment plant. Residuals from the Dalecarlia sedimentation basins and the Georgetown sedimentation basins would be collected and thickened/dewatered at the Dalecarlia water treatment plant. The disposal method would be contract hauling from Dalecarlia water treatment plant to a permitted disposal facility. Residuals from the Dalecarlia Reservoir forebay would be processed separately as is currently practiced and periodically hauled offsite or could also be disposed of onsite.

Facilities. The facilities to complete this option are similar to alternative B, but without the creation of the monofill on the Dalecarlia Reservoir grounds.

Conveyance and Transport. Pipelines would convey water treatment residuals from both the Dalecarlia sedimentation basins and the Georgetown sedimentation basins to the Dalecarlia thickening facility. After thickening and dewatering, the residuals would be hauled by truck to a permitted offsite disposal facility. The estimated average number of trucks for handling the residuals is approximately ten per day (during the five-day workweek) at the 20-year predicted residuals production level.

Alternative C: Thicken Water Treatment Residuals at Dalecarlia Water Treatment Plant, then Pump via a New Pipeline to Blue Plains. Process Dalecarlia Reservoir Forebay Residuals by Current Methods and Periodically Haul

This alternative would eliminate truck traffic associated with residuals on the roads surrounding the Washington Aqueduct Dalecarlia and Georgetown operations by conveying coagulated residuals to the Blue Plains advanced wastewater treatment plant for further processing and disposal. Residuals from the Dalecarlia Reservoir forebay would be processed separately as is currently practiced.

Facilities. This alternative would involve similar sedimentation basin modifications and new thickening facilities. Dewatering facilities would be located at Blue Plains.

Conveyance and Transport. Pipelines would convey coagulated residuals from both the onsite sedimentation basins and the Georgetown sedimentation basins to the Dalecarlia thickening facility. Another dedicated pair of pipelines within the right-of-way of the Potomac Interceptor sewer would convey the thickened residuals to Blue Plains for final processing. These buried pipes would be approximately 10 miles in length and 12 inches in diameter.

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MFR 13 APRIL 05 - TAB D



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September 10, 2004

Office of the General Manager

Ms. Patricia E. Gallagher
Executive Director
National Capital Planning Commission
401 9th Street, NW, Suite 500
Washington, DC 20576

Dear Ms. Gallagher:

I'm sending this letter to follow-up on the public meeting we held at the Dalecarlia Water Treatment Plant on Tuesday, September 7, 2004. In reflecting on the meeting, we believe that its format, location and overall effectiveness fell short of many peoples' expectations. We regret that and want to inform you of our immediate plans to improve the public's involvement in the development of the Draft Environmental Impact Statement (EIS) for the project to collect and dispose of our water treatment process residuals.

In the next few days I'll be sending you another letter that announces a specific date, time and location of a follow-on meeting along with a specific agenda. At least half of the time at our upcoming meeting will be devoted to listening to your thoughts and ideas about the project, for the record, and answering your questions. In the remaining time we will explain the specific steps we took to develop the initial 26 alternatives and how we applied the screening criteria. We will also present the status of the alternatives receiving greater analysis in the Draft EIS. This analysis is revealing the strengths and weaknesses of the alternatives. While not yet complete, it will be the basis for recommending a preferred alternative when we complete the Draft EIS and request public comment on it later this fall. In particular, we plan to discuss some of the emerging implementation issues related to the monofill and the Blue Plains alternatives.

We also expect that over the next several weeks we will hold additional meetings to continue to update you and to receive input. My next letter will contain more specifics on these.

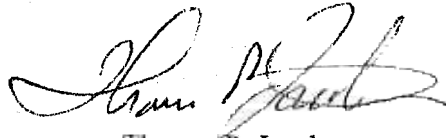
We have already received some requests for us to "start over" by considering new alternatives and then rescreening all of the known alternatives in order to have a potentially different set of alternatives to examine in the Draft EIS. As part of our continuing public involvement process, we will take any new alternative that the public offers and evaluate it against the same criteria we previously used. If it successfully satisfies those criteria it will be added for full evaluation in the Draft EIS. To keep to our legally mandated schedule, we would need your ideas before the end of September.

I also want to tell you that in addition to the meetings referred to in this letter, we will have a public hearing during the review period after the Draft EIS is published.

Before our next meeting we will post additional project information on our web site: <http://washingtonaqueduct.nab.usace.army.mil/aqueduct.htm>. This may help you keep track of our progress, and it may be useful to you in shaping your comments back to us. We also think it will be a helpful resource if you are unable to attend one of the meetings. For those without Internet access we can provide you this information by mail.

If you have questions or suggestions you would like us to consider for the next meeting, please contact us via our website, or at our mailing address shown in the letterhead, Attn: Michael Peterson, or call us at 202-764-0025. We welcome your participation and look forward to the opportunity to work with you.

Sincerely,

A handwritten signature in black ink, appearing to read "Tom P. Jacobus", written in a cursive style.

Thomas P. Jacobus
General Manager

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November 5, 2004

Office of the General Manager

Mr. Howard A. Denis
District 1 Councilmember
Montgomery County Council
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Dear Mr. Denis:

We would like to invite you to a meeting on Tuesday, November 16 at 6:30 pm in Sibley Memorial Hospital's Ernst Auditorium. It is located at 5255 Loughboro Road, NW, Washington, DC 20016.

This meeting concerns the Washington Aqueduct Residuals Project and the ongoing work to select an alternative to the current practice of flushing the residuals to the Potomac River. The meeting agenda is enclosed.

We have designed the meeting to continue to update attendees on the project, including what we have learned to date about the current alternatives. We will spend the majority of the time receiving public input and responding to questions.

Additionally, November 15, 2004 is the deadline for submitting any proposals for alternatives and options not already considered. Members of the public or other stakeholders may submit alternative concepts to our mailing address, Attn: Michael Peterson, or with the comment form on our project web site:

<http://washingtonaqueduct.nab.usace.army.mil/aqueduct.htm>

All additional alternatives suggested to us by the deadline will be screened for possible inclusion in the ongoing Draft Environmental Impact Statement analysis.

Sincerely,

Thomas P. Jacobus
General Manager

Enclosure: Agenda

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Ms. Sherry Krest
Chesapeake Bay Field Office
U.S. Fish and Wildlife Service
177 Admiral Cochrane Drive
Annapolis, MD 21401

Mr. Phil Mendelson
Councilmember-At-Large
The John A. Wilson Building
1350 Pennsylvania Avenue, NW, Suite 400
Washington, DC 20004

MEMORANDUM FOR RECORD

SUBJECT: Washington Aqueduct Coordination with Agencies for Development of an Environmental Impact Statement for a Proposed Water Treatment Residuals Management Process

1. The formal coordination for the Washington Aqueduct Draft Environmental Impact Statement (DEIS) for a Proposed Water Treatment Residuals Management Process between January 2004 and April 2005 was summarized in a memorandum for record dated 13 APRIL 2005. Further agency coordination was accomplished through the publication and distribution of the DEIS in April 2005.
2. The initial set of letters (DEIS Letter #1), sent in April 2005, provided a reference for transmitting the DEIS announced a 45-day review and comment period (subsequently extended to 75 days) and a public hearing. Each recipient at a minimum received with this letter a compact disc copy of the DEIS. Paper copies of the DEIS were distributed to the recipients upon request. The mailing list for DEIS Letter #1 is attached at Tab A.
3. Washington Aqueduct sent a letter to four members of Congress (Honorable Eleanor Holmes Norton, Honorable Barbara Mikulski, Honorable Paul S. Sarbanes, and Honorable Chris Van Hollen) on April 21, 2005 to respond to their request to delay the publication of the DEIS. Specific responses to the questions raised by the members of Congress were included with the letter.
4. Some requests for an extension of the review and comment period were received from neighbors and elected representatives. In part to respond to these requests and in part to provide a reminder for the public hearing, a second set of letters (DEIS Letter #2) were sent in early May 2005. These letters indicated that the review and comment period would not be extended (this position was subsequently changed). The mailing list for DEIS Letter #2 is at Tab B.
5. Additional paper copies of the DEIS were provided, as requested, on May 10, 2005 to the Regional Planner of the Maryland State Highway Administration. A copy of the DEIS was transmitted, as requested, on May 11, 2005 to an Environmental Advisor in the Executive Office of the Mayor of the District of Columbia.
6. Notification of a 30-day extension to the review and comment period (75 days total) was provided to elected and community representatives through telephone messages or conversations on June 3, 2005. Letters (DEIS Letter #3) also were also sent to those neighbors who requested an extension on June 9 and 10, 2005. The mailing list for DEIS Letter #3 is at Tab C.
7. Washington Aqueduct received requests from two Advisory Neighborhood Commission 3D (ANC 3D) commissioners for specific data and formulae used to estimate expected quantities of

water treatment residuals generated. This data was provided to the ANC 3D commissioners on June 27 (District 3D04 Commissioner) and 28 (District 3D02 Commissioner), 2005.

8. Washington Aqueduct sent letters responding to specific comments from certain agencies that commented on the DEIS as follows: Environmental Protection Agency Region 3 (August 29, 2005); Honorable Nancy Floreen and Honorable Howard A. Denis from the Montgomery County (Maryland) Council (August 29, 2005).

9. Copies of the letters sent to agencies are included in the Administrative Record for the DEIS and the Administrative Record for the Final Environmental Impact Statement.

A handwritten signature in black ink, appearing to read "Michael C. Peterson", with a stylized, sweeping flourish at the end.

MICHAEL C. PETERSON
Environmental Engineer

DEIS Letter # 1
MFR 30 AUG 05 - TAB A



DEPARTMENT OF THE ARMY
WASHINGTON AQUEDUCT
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
5900 MACARTHUR BOULEVARD, N.W.
WASHINGTON, D.C. 20016-2514
April 14, 2005

Office of the General Manager

Honorable Eleanor Holmes Norton
United States House of Representatives
2136 Rayburn House Office Building
Washington, DC 20515

Dear Ms. Norton:

Enclosed with this letter is a compact disc containing a copy of the Draft Environmental Impact Statement (DEIS) for a proposed water treatment residuals management process for the Washington Aqueduct, a division of the U.S. Army Corps of Engineers, Baltimore District.

Copies of the entire administrative record, including the DEIS, can be viewed now at the **Palisades Branch of the District of Columbia Public Library** and on or about April 21 at the **Little Falls Branch of the Montgomery County Public Library**. In addition, the DEIS can be downloaded from the project website:

<http://washingtonaqueduct.nab.usace.army.mil/aqueduct.htm>

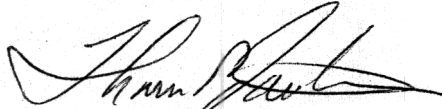
A public hearing will be held for the DEIS for further explanation and receipt of public comments. This public hearing will be held on May 17, 2005 at Metropolitan Memorial United Methodist Church located at 3401 Nebraska Avenue NW, Washington, DC 20016 at 6:30 pm.

This DEIS has been prepared in accordance with Part 1502 of the Council on Environmental Quality's regulations (40 CFR 1502). The information you will receive is outlined as follows.

- o Volume 1 Draft Environmental Impact Statement
- o Volume 2a Appendices
- o Volume 2b Appendices
- o Volume 3a Comments and Responses
- o Volume 3b Comments and Responses
- o Volume 4 Engineering Feasibility Study Compendium

If you wish to submit written comments, send them c/o Mr. Michael C. Peterson, Washington Aqueduct, 5900 MacArthur Boulevard NW, Washington, DC 20016-2514. As an alternative to submitting comments by mail, comments may be submitted by using the project website comment form, or by e-mail message to michael.c.peterson@usace.army.mil. Comments must be received or postmarked within the 45 day public comment period, or no later than June 6, 2005. If you have addition questions, please contact Mr. Michael C. Peterson at 202-764-0025.

Sincerely,

A handwritten signature in black ink, appearing to read "Thomas P. Jacobus", with a stylized flourish at the end.

Thomas P. Jacobus
General Manager

Enclosure

Mr. William O. Howland, Interim Director D.C. Department of Public Works 2000 14th Street, NW Washington, DC 20001	Adrian H. Thompson, Chief District of Columbia Fire and Emergency Medical Services District of Columbia 1923 Vermont Avenue, NW Washington, DC 20001	Mr. James A. Caldwell, Director Montgomery County Government Department of Environmental Protection 255 Rockville Pike Rockville, MD 20850
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Brookmont Civic Association
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Bethesda, MD 20816

DEIS Letter # 2
MFR 30 AUG 05 - TAB B



DEPARTMENT OF THE ARMY
WASHINGTON AQUEDUCT
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
5900 MACARTHUR BOULEVARD, N.W.
WASHINGTON, D.C. 20016-2514
May 6, 2005

Office of the General Manager

Mr. Charles R. Loehr, Director
Montgomery County Department of Park & Planning
The Maryland-National Capital Park & Planning Commission
8787 Georgia Avenue
Silver Spring, MD 20910

Dear Mr. Loehr:

I'd like to remind you of the public hearing on the Washington Aqueduct's Draft Environmental Impact Statement (DEIS) for a proposed water treatment residuals management process. It will be on May 17, 2005, at the Metropolitan Memorial United Methodist Church located at 3401 Nebraska Avenue NW, Washington, DC 20016 at 6:30 pm.

The hearing will begin with a series of short presentations to summarize the project's purpose and need and to describe the proposed alternative. Then, we will begin to receive public testimony. The Federal Mediation and Conciliation Service will moderate the hearing, which will follow the enclosed hearing guidelines.

If you wish to give public testimony, you will need to register. To register prior to the evening of the hearing you may contact Mr. Michael Peterson at 202-764-0025 or michael.c.peterson@usace.army.mil. On the evening of the hearing, you may register with a staff member outside the entrance to the hearing area until 8:30 pm. You will also have the opportunity to testify privately with a stenographer in a room adjacent to the hearing location.

If you wish to ask questions on any aspect of the project, you will have that opportunity beginning at 5:30 pm in a separate room at the hearing location. Washington Aqueduct staff and consultants will be present to answer questions you may have and give any background on the project that you wish to know about. That opportunity will run concurrently with the opportunity to offer public testimony in the hearing room.

Washington Aqueduct has received a few requests to extend the DEIS review and comment period beyond the 45 days ending June 6, 2005. We are complying with a National Pollutant Discharge Elimination System permit and a time schedule and conditions in a Federal Facilities Compliance Agreement issued by Region 3 of the United States Environmental Protection Agency. Over the course of our work to develop options and publish the DEIS, we offered several extensions to accommodate public involvement. To accommodate that, Region 3 agreed to postpone an internal compliance milestone. In subsequent contact with Region 3, they

have made it very clear that the final compliance dates are firm. Therefore, we do not foresee extending the public comment period.

Washington Aqueduct staff has offered to be available to community groups for information briefings and discussions during the comment period.

A full paper copy of the DEIS is located at the Palisades Branch Library in the District of Columbia and the Little Falls Branch of the Montgomery County, Maryland library. It is also available electronically on compact disc (provided upon request) or at the project website:

<http://washingtonaqueduct.nab.usace.army.mil/aqueduct.htm>

Thank you for your interest in this project.

Sincerely,

A handwritten signature in black ink, appearing to read 'Thomas P. Jacobus', with a stylized flourish extending to the right.

Thomas P. Jacobus
General Manager

Enclosure

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DEIS Letter # 3
MFR 30 AUG 05 - TAB C



DEPARTMENT OF THE ARMY
WASHINGTON AQUEDUCT
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
5900 MACARTHUR BOULEVARD, N.W.
WASHINGTON, D.C. 20016-2514

June 9, 2005

Office of the General Manager

Honorable Paul S. Sarbanes
United States Senate
309 Hart Senate Office Building
Washington, DC 20510

Dear Senator Sarbanes:

Thank you for your letter requesting that Washington Aqueduct extend the public comment period on the Water Treatment Plant Residuals Draft Environmental Impact Statement (DEIS) beyond June 6, 2005.

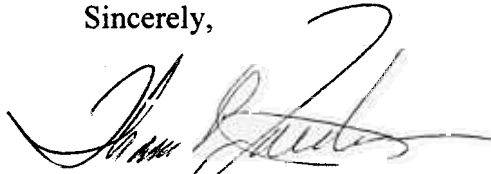
Washington Aqueduct has extended the comment period for 30 days to allow the public to finalize any comments they wish to submit for consideration and inclusion in the Final Environmental Impact Statement (FEIS). The comment period will now end on July 6, 2005. This will provide a total of 75 days for public comment from the formal notice of the DEIS in the Federal Register on April 22.

The community interest and involvement in the alternatives analysis and the DEIS preparation have been helpful in shaping the alternatives analysis and the recommended alternative contained in the DEIS. Washington Aqueduct will evaluate all comments received and incorporate them as appropriate into the FEIS. Your letter specifically mentioned some issues that the Concerned Neighbors group had addressed to you. All of those will certainly be considered and addressed in the FEIS.

In order to extend the comment period, Washington Aqueduct needed to get an extension from EPA Region 3 of an interim milestone in the Federal Facilities Compliance Agreement (FFCA) that accompanies the National Pollutant Discharge Elimination System permit. The revised date for submission to EPA Region 3 of the Record of Decision and a construction schedule for the selected alternative will now be November 2, 2005. That is the milestone that had previously be changed from June 3, 2005 to October 17, 2005 to accommodate the additional public input during the alternatives analysis stage of the process prior to issuing the DEIS. No other milestones in the FFCA have been changed.

If you would like me to meet with you or a member of your staff to go over any of the details in the DEIS or discuss any aspect of this proposed undertaking, I will be happy to do that. I may be reached at 202-764-0031.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Thomas P. Jacobus', with a large, sweeping flourish extending to the right.

Thomas P. Jacobus
General Manager



DEPARTMENT OF THE ARMY
WASHINGTON AQUEDUCT
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
5900 MACARTHUR BOULEVARD, N.W.
WASHINGTON, D.C. 20016-2514

June 10, 2005

Office of the General Manager

Ms. Debra Graham, Co-President
Westmoreland Citizens Association
5407 Duvall Drive
Bethesda, MD 20816

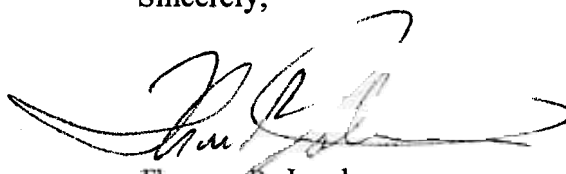
Dear Ms. Graham:

Thank you for your letter requesting that Washington Aqueduct extend the public comment period on the Water Treatment Plant Residuals Environmental Impact Statement (DEIS) beyond June 6, 2005.

Washington Aqueduct has extended the comment period for 30 days to allow the public to finalize any comments they wish to submit for consideration and inclusion in the Final Environmental Impact Statement (FEIS). The comment period will end on July 6, 2005.

Please forward your comments to us by mail at 5900 MacArthur Boulevard, NW, Washington, DC 20016-2514, attn: Michael Peterson, by e-mail to michael.c.peterson@usace.army.mil, or use the website comment form found at <http://washingtonaqueduct.nab.usace.army.mil/aqueduct.htm>.

Sincerely,



Thomas P. Jacobus
General Manager

Honorable Carol Schwartz
Chair, Committee on Public Works and the
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DEIS Letter #1

Tab A

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PROJECT WEBSITE



Water Treatment Residuals Management Project

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NEWS

- Washington Aqueduct is soliciting public comment on a Draft Environmental Impact Statement (DEIS) for a proposed residuals management process. In response to several requests for additional time to review the DEIS and offer comments, Washington Aqueduct will extend the comment period for 30 days beyond the current June 6 deadline. July 6, 2005 will be the new deadline for submission of comments.
- The Draft Environmental Impact Statement (DEIS) was filed with US EPA on April 14, 2005 for submission to the Federal Register for publication. The Executive Summary and the 4 volume document (filed in 6 volumes) are available are now available in Adobe Acrobat format.

■ [Executive Summary](#)

- [Volume 1 Draft Environmental Impact Statement](#)
- [Volume 2a Appendices](#)
- [Volume 2b Appendices](#)
- [Volume 3a Comments and Responses](#)
- [Volume 3b Comments and Responses](#)
- [Volume 4 Engineering Feasibility Study Compendium](#)

Compact disc copies of the DEIS are available upon request (see contact information below.) Hard copies are available upon request at a cost of \$150, to cover reproduction costs.

Copies of the DEIS and the administrative record of the DEIS are available for viewing at the Palisades Branch of the District of Columbia Public Library and the Little Falls Branch of the Montgomery County Public Library.

Comments must be received by Washington Aqueduct on or before July 6, 2005, to ensure consideration in the Final Environmental Impact Statement.

Please send written comments concerning this DEIS and proposed action to: Michael C. Peterson, Washington Aqueduct, Baltimore District, U.S. Army Corps of Engineers, 5900 MacArthur Boulevard NW, Washington, DC 20016. Please submit electronic comments to michael.c.peterson@usace.army.mil or by using the project website comment form at <http://washingtonaqueduct.nab.usace.army.mil/cgi-bin/contact>.

FOR FURTHER INFORMATION CONTACT: Michael C. Peterson, Environmental Engineer, Washington Aqueduct, Baltimore District, U. S. Army Corps of Engineers, (202) 764-0025 or michael.c.peterson@usace.army.mil.

- The [December 20, 2004 document](#) required by paragraph 21 in the Federal Facility Compliance Agreement is still available. This [document](#) describes the analysis of alternatives included in the development of the Draft Environmental Impact Statement.
- Two documents (four separate volumes) referenced in the Feasibility Study are still available in Adobe Acrobat format. The documents have also been bundled in a zip file and are very sizable. Contact michael.c.peterson@usace.army.mil if you have difficulties downloading the documents. Download the zipped documents [here](#) (file size - 172 MB) or retrieve the individual files below.

The two documents are:

- Department of the Army Baltimore District, Corps of Engineers, Washington Aqueduct. (1996) "Dalecarlia Treatment Plant and Georgetown Reservoir Residuals Collection and Treatment (35% Design)." [Volume 1](#), [Volume 2](#) and [Volume 3](#).
- Department of the Army Baltimore District, Corps of Engineers, Washington Aqueduct. (1995) "[Dalecarlia Water Treatment Plant and Georgetown Reservoir Residuals Disposal Facilities - Residuals Disposal Study](#)."
- [Letter to neighbors of Washington Aqueduct dated September 10, 2004](#).
- [Letter to neighbors of Washington Aqueduct dated August 12, 2004](#).
- The [Scope of Statement](#), which is a work plan for the Draft Environmental Impact Statement, is still available.

Points of Contact for This Page:	
For Content: Call the Residuals Project Environmental Engineer at 202-764-0025	For Technical Support: Paula Schultz, CENAB-IM 410-962-4000 Paula.Schultz@usace.army.mil
© U.S. Army Corps of Engineers Baltimore District Last updated on undefined NaN, NaN Disclaimer	



Water Treatment Residuals Management Project

Project Background

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Project Background

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Washington Aqueduct water treatment operations remove naturally occurring Potomac River sediment by adding aluminum sulfate as a coagulant. The sediment and coagulant accumulate in six basins that are periodically flushed to the Potomac River. This process has been permitted under the EPA's National Pollutant Discharge Elimination System (NPDES). [NPDES Permit DC0000019](#) was reissued and became effective on April 15, 2003. This permit significantly reduced the allowable concentration of residuals that may be discharged by Washington Aqueduct to the Potomac River. Due to the change in the permit, Washington Aqueduct is required to evaluate methods of residuals collection, processing, conveyance, and disposal.

Because elements of the permit were appealed, EPA issued a draft revision on November 12, 2003. That [version of the permit](#) and the accompanying fact sheet propose to (1) extend the spring spawning season through June 30; (2) add a monitoring requirement for perchlorate at Outfall 002q; (3) delete certain studies from the permit and transfer them to other agencies to complete; (4) add two new outfalls (i.e., 008 and 009) to accommodate the infrequent draining of two finished water reservoirs. None of the proposed changes affect the permit conditions currently in force that place new limits on the discharge of sediment from the six sedimentation basins.

Washington Aqueduct and Environmental Protection Agency Region III entered into a [Federal Facilities Compliance Agreement](#) ([EPA factsheet](#)) to allow Washington Aqueduct to continue to produce drinking water while developing and implementing a new residuals management process.

In order to comply with both NPDES Permit DC0000019 and the Federal Facilities Compliance Agreement, Washington Aqueduct has begun the process of identifying alternatives, evaluating the feasibility of the alternatives, and analyzing potential impacts including, but not limited to, predicted changes to air quality, aquatic resources, terrestrial and wetland resources, cultural resources, traffic, solid and toxic waste, and infrastructure as well as any environmental justice concerns.

In order to accomplish this task, Washington Aqueduct intends to prepare a Draft Environmental Impact Statement for the proposed water

treatment residuals management process.

A list of [Frequently Asked Questions](#) and answers to those questions is available related to Washington Aqueduct, water treatment residuals, the National Environmental Policy Act (NEPA), and the Environmental Impact Statement process for this project. In addition, a [summary of alternatives](#) is available which briefly describes the alternatives being analyzed in detail in the Environmental Impact Statement.

Copies of various project documents already published as part of the NEPA process are available in the [Current Publications page](#).

Information related to the public involvement process is available in the [Public Involvement page](#).

Any questions or comments can be directed to the Washington Aqueduct by using the [website comment form](#), by email to michael.c.peterson@usace.army.mil, by phone at 202-764-0025, or by mail to:

Washington Aqueduct
5900 MacArthur Boulevard, NW
Washington, DC 20016-2514
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Water Treatment Residuals Management Project

Frequently Asked Questions

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[What is the proposed project? What is its purpose?](#)

[What is an EIS? What is NEPA?](#)

[Who will make the final decision on the selection of an alternative for this proposed project?](#)

[Why did you select the screening criteria that you did?](#)

[When you complete the analysis how will the preferred alternative be selected?](#)

[What did you do to notify the public about the project and offer them a chance to provide input?](#)

[You seem to be going through the NEPA process with a very definite, and very fast, schedule in mind. What is that schedule, and why does it seem to be so fast?](#)

[Does the public have any say in the timing of this compliance schedule?](#)

[Are the water treatment residuals toxic?](#)

[If the water treatment residuals are not toxic, then why would EPA Region 3 issue a permit prohibiting the discharge of water treatment residuals?](#)

[What is a monofill?](#)

[If you were to build the monofill alternative, don't you risk runoff of sediments back to the Potomac River? What about the safety of the drinking water supply itself?](#)

What would the monofill look like from my property as well as public areas?

If it is built, the monofill will only last 20 years; won't you have to do something else after it is completely filled?

Isn't the proposed monofill located in a place where the Spring Valley project is expanding its investigations? Is there a conflict between the plans for a monofill and the Baltimore District Spring Valley investigation and clean-up plans?

Where have other landfills containing water treatment residuals been created in urban settings?

Would we have to disclose the monofill as part of our real estate transactions?

If the monofill were to be built, how would it affect my property's value?

Doesn't the District of Columbia prohibit landfills? How could you build something that violates DC ordinances?

Regardless of the chosen alternative, don't you still have to construct some large facilities at the Dalecarlia Water Treatment Plant (WTP)? Are they close to the Capital Crescent Trail?

All of the alternatives under consideration involve handling the sediments at the Dalecarlia WTP. What will the noise and smell impacts be like?

If off-site disposal is chosen, how many trucks will be traveling on our area roads? How does this compare to the number of trucks that are there now?

Can you secure the necessary permits, and construct a new pipeline all the way to Blue Plains, within the time required for a project to be complete?

Why can't you put the residuals in the sewer like other

[water treatment plants?](#)

[How has public concerns shaped the project so far?](#)

[How can my opinions and concerns be heard? How can I influence the process?](#)

[Were any good alternatives eliminated solely because they might cost too much?](#)

[Have you made a decision on selecting an alternative yet?](#)

[Glossary](#)

Points of Contact for This Page:	
For Content: Call the Residuals Project Environmental Engineer at 202-764-0025	For Technical Support: Paula Schultz, CENAB-IM 410-962-4000 Paula.Schultz@usace.army.mil
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Water Treatment Residuals Management Project

Current Publications

The project team developing the integrated feasibility study and Environmental Impact Statement will produce project-related documents throughout the course of the work. These documents will be posted here as the project progresses.

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Document	Date Published
Notice of Intent to Prepare a Draft Environmental Impact Statement for a Proposed Water Treatment Residuals Management Process, Washington Aqueduct, DC	January 12, 2004
Description of Proposed Action and Alternatives	May 2004
Engineering Feasibility Study	May 2004
Proposed Water Treatment Residuals Management Process Scope of Statement	August 2004
December 20, 2004 document required by paragraph 21 in the Federal Facility Compliance Agreement	December 2004

A list of [Frequently Asked Questions](#) and answers to those questions is available related to Washington Aqueduct, water treatment residuals, the National Environmental Policy Act (NEPA), and the Environmental Impact Statement process for this project.

The various compliance documents that established a mandate for this project can be found in the [project background page](#).

Older referenced documents previously developed prior to the start of the current NEPA action are summarized in the following table.

Document	Date Published
Dalecarlia Treatment Plant and Georgetown Reservoir Residuals Collection and Treatment (35% Design). Volume 1 , Volume 2 and Volume 3	1996
Dalecarlia Water Treatment Plant and Georgetown Reservoir Residuals Disposal Facilities - Residuals Disposal Study	1995
Draft NPDES Permit Review Memorandum on Residuals Solids Evaluations	2003
Water Quality Studies in the Vicinity of Washington Aqueduct	October 2001
Impacts of Sedimentation Basin Discharges from the Dalecarlia and Georgetown Reservoirs on the Potomac River	February 1993

Points of Contact for This Page:	
For Content: Call the Residuals Project Environmental Engineer at 202-764-0025	For Technical Support: Paula Schultz, CENAB-IM 410-962-4000 Paula.Schultz@usace.army.mil
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Water Treatment Residuals Management Project

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Public Meetings and Events

The analysis of the Environmental Impact Statement is intended to be informed by the interests of the public and local, state and federal regulatory agencies. To facilitate this input there will be several opportunities during the project for public review and comment: the Project Scoping Process at the beginning of the project, the availability of the Description of Proposed Actions and Alternatives in late Spring/early Summer 2004, and the availability of the Draft Environmental Impact Statement in April 2005.

The scoping process began on January 12, 2004 and concluded 30 days later, on February 11, 2004. A scoping meeting was held on January 28, 2004 as required by NEPA regulations.

Washington Aqueduct organized several other public meetings, in the interest of disclosing the progress of the development of the Environmental Impact Statement and to solicit ideas and opinions from stakeholders.

The following table contains information and links to information regarding the Washington Aqueduct sponsored public meetings that have already occurred related to the development of the Environmental Impact Statement.

**Table 1
Public Meetings**

Meeting Date	Meeting Location	Meeting Summary	Presentation/ Slides (if available)	Transcripts (if available)	Newspaper Announcements
01/28/04	St. Patrick's Episcopal Church and Day School	Meeting #1 summary	Meeting #1 Presentation	Public comment transcript ; Other formal scoping comments	Notice <i>Washington Post</i> (01/22) <i>Northwest Current</i> (01/22)
05/26/04	Sibley Memorial Hospital Ernst Auditorium	Meeting #2 summary	Meeting #2 Presentation	None available	Notice <i>Washington Post</i> (05/24) <i>Northwest Current</i> (05/20)

09/07/04	Dalecarlia Water Treatment Plant	none	Meeting #3 Presentation; Handout	Public comment transcript	Notice Washington Post (8/31) <i>Northwest Current</i> (8/25, 9/1) Bethesda Gazette (8/25, 9/1)
09/28/04	Sibley Memorial Hospital Ernst Auditorium	none	Emerging Issues Presentation; Alternatives Screening Results	<i>Full meeting transcript (available soon)</i>	Notice Washington Post (9/21) <i>Northwest Current</i> (9/22) Bethesda Gazette (9/22)
11/16/04	Sibley Memorial Hospital Ernst Auditorium	none	Emerging Issues; Submitted Alternatives	<i>Full meeting transcript (available soon)</i>	Notice Washington Post (11/9) <i>Northwest Current</i> (11/10) Bethesda Gazette (11/10)

In addition to the open public meetings, Washington Aqueduct has also met with several individual neighbors and representatives of neighborhoods both at the Washington Aqueduct and at other locations in order to answer questions, solicit input, and discuss the need for and development of the Environmental Impact Statement. Time and resources permitting, Washington Aqueduct is willing to accommodate reasonable requests for additional individual or group meetings. To make this type of request, please contact Washington Aqueduct at 202-764-0025, or by email at michael.c.peterson@usace.army.mil, or by using the [website comment form](#).

Information regarding general mailings including individual invitations to meetings and sent to officials at various agencies, political officials, community representatives, and other stakeholders are outlined in Table 2. The names and addresses of individual private residences that were sent letters are not included in the interest of respecting personal privacy. Table 2 does not include specific letters in response to inquiries by or for coordination with stakeholders.

Table 2
General Project Mailings

Letter (representative sample)	Date on Letter	List of Officials sent letter
Letter #1	January 12, 2004	Letter #1 officials list
Letter #2	May 18, 2004	Letter #2 officials list
Letter #3	August 12, 2004	Letter #3 officials list
Letter #4	September 10, 2004	Letter #4 officials list

Letter #5

September 17,
2004[Letter #5 officials list](#)

Letter #6

November 5, 2004

[Letter #6 officials list](#)

Two comment periods outside of the typical requirements were offered. The first of the comment periods extended from September 10, 2004 to November 15, 2004. During this comment period, various individuals or groups suggested 102 alternatives or options that could potentially be used to manage water treatment residuals. The second comment period, which is on going, extends from December 16, 2004 to February 14, 2005. To make a comment or suggestion, please see the comment page for contact information.

Points of Contact for This Page:**For Content:**

Call the Residuals Project Environmental
Engineer at 202-764-0025

For Technical Support:

Paula Schultz, CENAB-IM
410-962-4000 Paula.Schultz@usace.army.mil

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Baltimore District

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Water Treatment Residuals Management Project

Comments on the Environmental Impact Statement

Currently Washington Aqueduct is seeking input from the public regarding any alternatives not already considered. New alternatives may be proposed to Washington Aqueduct by **February 14, 2005** by using the [website comment form](#), by sending an email to michael.c.peterson@usace.army.mil, or by sending a letter to:

Washington Aqueduct
5900 MacArthur Boulevard, NW
Washington, DC 20016
Attn: Michael Peterson

Points of Contact for This Page:	
For Content: Call the Residuals Project Environmental Engineer at 202-764-0025	For Technical Support: Paula Schultz, CENAB-IM 410-962-4000 Paula.Schultz@usace.army.mil
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CONSULTATION LETTERS TO AGENCIES



DEPARTMENT OF THE ARMY
WASHINGTON AQUEDUCT
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
5900 MACARTHUR BOULEVARD, N.W.
WASHINGTON, D.C. 20016-2514

August 17, 2004

Office of the General Manager

Lieutenant Mike Wischnewski, Facility Manager
Anacostia Naval Station
121 DIA Access Road, SW
Washington, DC 20374

Dear Lieutenant Wischnewski:

Washington Aqueduct will be changing the way we have historically disposed of the solids that collect in the sedimentation basins at the Dalecarlia water treatment plant and the basins at Georgetown. I wanted to update you on the progress we are making as we analyze and subsequently select a preferred alternative for construction.

As you may know, we are operating under a Federal Facility Compliance Agreement issued by the United States Environmental Protection Agency Region III. That agreement and the accompanying National Pollutant Discharge Elimination System permit will cause us to completely cease returning the solids to the Potomac River by December 31, 2009. While that seems like a long time in the future, most of this time will be required for the construction of facilities and procurement of equipment.

We are at the stage where we have identified three feasible alternatives that currently match our screening criteria as well as the project purpose and need. The criteria include meeting the terms and conditions of the permit and compliance agreement, preserving the reliability and redundancy of the existing water production system and considering the economic effects of the various options.

We are beginning to acquire data for the Draft Environmental Impact Statement to evaluate these feasible alternatives. All of the environmental resources such as air quality, land use, noise, socioeconomic, transportation, etc. are included in this data acquisition process. We know that the collection, transport and disposal of the solids is going to change the way we currently operate and that both immediate neighbors as well as other stakeholders have an interest in not only the decision we make, but also the process we use to arrive at that decision.

Therefore, we are holding a public meeting that we have designed to provide up to date information on our progress and process. The first part of the meeting will be an open house where members of Washington Aqueduct staff and its consultants will be available with displays and will be prepared to answer questions. That portion will be followed by a group meeting to summarize the material and address issues you may have. The meeting will be held on September 7, 2004 at the Dalecarlia Water Treatment Plant at 5900 MacArthur Boulevard, NW, Washington D.C. The meeting will start at 6:30 pm, and we expect to conclude at 9:00 pm.

From a number of inquires we have received, I believe that some individuals may have gotten the impression that a decision on which course of action to pursue has already been made. That is not correct. We are working with three options that achieve compliance with our permit in ways that have different measurable effects on peoples' lives and the environment.

One option involves local processing and hauling via commercial trucks to a disposal site outside the immediate area, such as farmlands. Another option will analyze an alternative to trucking the solids through the neighborhoods. This is the option that would essentially build a hill adjacent to the Dalecarlia Reservoir on land owned by Washington Aqueduct. The third option will analyze a smaller local collection and treatment facility and a pipeline in the trace of the major sewer that goes in the immediate vicinity of the Dalecarlia water treatment plant to the Blue Plains advanced wastewater treatment plant. The solids would then be disposed of along with the existing biosolids that are trucked daily from Blue Plains.

I have included with this letter a more detailed description of each alternative we plan to study as well as additional background on the project. Other documents are available on our project website at <http://washingtonaqueduct.nab.usace.army.mil/aqueduct.htm> such as the Description of Proposed Action and Alternatives, the Engineering Feasibility Study, and the recently completed Scope of Statement.

We plan to complete the Draft Environmental Impact Statement by mid-November and it will be available to the public for formal comment. It will contain the preferred alternative with the supporting rationale.

If you or a member of your staff cannot attend the September 7 meeting, you may send us your comments via our website or you may write to us at 5900 MacArthur Boulevard, Washington, DC 20016, Attention: Michael Peterson.

Sincerely,

A handwritten signature in black ink, appearing to read 'Thomas P. Jacobus', with a long horizontal flourish extending to the right.

Thomas P. Jacobus
General Manager

Enclosure



DEPARTMENT OF THE ARMY
WASHINGTON AQUEDUCT
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
5900 MACARTHUR BOULEVARD, N.W.
WASHINGTON, D.C. 20016-2514

August 17, 2004

Office of the General Manager

Lt Col Dennis Jasinski, Commander
11th CES
370 Brookley Ave.
Bolling AFB, DC 20032-5403

Dear Colonel Jasinski:

Washington Aqueduct will be changing the way we have historically disposed of the solids that collect in the sedimentation basins at the Dalecarlia water treatment plant and the basins at Georgetown. I wanted to update you on the progress we are making as we analyze and subsequently select a preferred alternative for construction.

As you may know, we are operating under a Federal Facility Compliance Agreement issued by the United States Environmental Protection Agency Region III. That agreement and the accompanying National Pollutant Discharge Elimination System permit will cause us to completely cease returning the solids to the Potomac River by December 31, 2009. While that seems like a long time in the future, most of this time will be required for the construction of facilities and procurement of equipment.

We are at the stage where we have identified three feasible alternatives that currently match our screening criteria as well as the project purpose and need. The criteria include meeting the terms and conditions of the permit and compliance agreement, preserving the reliability and redundancy of the existing water production system and considering the economic effects of the various options.

We are beginning to acquire data for the Draft Environmental Impact Statement to evaluate these feasible alternatives. All of the environmental resources such as air quality, land use, noise, socioeconomic, transportation, etc. are included in this data acquisition process. We know that the collection, transport and disposal of the solids is going to change the way we currently operate and that both immediate neighbors as well as other stakeholders have an interest in not only the decision we make, but also the process we use to arrive at that decision.

Therefore, we are holding a public meeting that we have designed to provide up to date information on our progress and process. The first part of the meeting will be an open house where members of Washington Aqueduct staff and its consultants will be available with displays and will be prepared to answer questions. That portion will be followed by a group meeting to summarize the material and address issues you may have. The meeting will be held on September 7, 2004 at the Dalecarlia Water Treatment Plant at 5900 MacArthur Boulevard, NW, Washington D.C. The meeting will start at 6:30 pm, and we expect to conclude at 9:00 pm.

From a number of inquiries we have received, I believe that some individuals may have gotten the impression that a decision on which course of action to pursue has already been made. That is not correct. We are working with three options that achieve compliance with our permit in ways that have different measurable effects on peoples' lives and the environment.

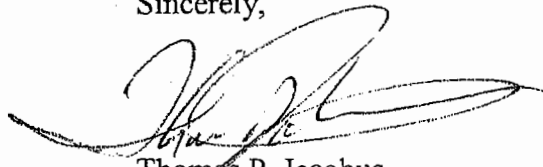
One option involves local processing and hauling via commercial trucks to a disposal site outside the immediate area, such as farmlands. Another option will analyze an alternative to trucking the solids through the neighborhoods. This is the option that would essentially build a hill adjacent to the Dalecarlia Reservoir on land owned by Washington Aqueduct. The third option will analyze a smaller local collection and treatment facility and a pipeline in the trace of the major sewer that goes in the immediate vicinity of the Dalecarlia water treatment plant to the Blue Plains advanced wastewater treatment plant. The solids would then be disposed of along with the existing biosolids that are trucked daily from Blue Plains.

I have included with this letter a more detailed description of each alternative we plan to study as well as additional background on the project. Other documents are available on our project website at <http://washingtonaqueduct.nab.usace.army.mil/aqueduct.htm> such as the Description of Proposed Action and Alternatives, the Engineering Feasibility Study, and the recently completed Scope of Statement.

We plan to complete the Draft Environmental Impact Statement by mid-November and it will be available to the public for formal comment. It will contain the preferred alternative with the supporting rationale.

If you or a member of your staff cannot attend the September 7 meeting, you may send us your comments via our website or you may write to us at 5900 MacArthur Boulevard, Washington, DC 20016, Attention: Michael Peterson.

Sincerely,



Thomas P. Jacobus
General Manager

Enclosure



DEPARTMENT OF THE ARMY
WASHINGTON AQUEDUCT
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
5900 MACARTHUR BOULEVARD, N.W.
WASHINGTON, D.C. 20016-2514

August 9, 2004

Office of the General Manager

Mr. Kevin Brandt, Superintendent
C&O Canal NHP Headquarters
1850 Dual Highway, Suite 100
Hagerstown, MD 21740

Dear Mr. ~~Brandt~~ ^{*Brandt*}:

The purpose of this letter is to consult with your office regarding the Draft Environmental Impact Statement (DEIS) that is being prepared for Washington Aqueduct's Proposed Residuals Management Process in Washington, D.C. The DEIS evaluates the potential environmental consequences of implementing the alternative actions including a No-Action and preferred alternative.

Background:

The U.S. Army Corps of Engineers, Baltimore District, Washington Aqueduct operates the Dalecarlia and McMillan Water Treatment Plants in Washington, D.C., serving over one million persons in the District of Columbia and Northern Virginia area with potable water. The treatment process removes solid particles (river silt) from the Potomac River supply water, treats and disinfects the water, and distributes the finished water to the metropolitan service area. The solids removed during the treatment process have historically been returned to the river, but a recently reissued version of the Washington Aqueduct National Pollutant Discharge Elimination System (NPDES) permit (Permit No. DC 0000019) effectively precludes the discharge of water treatment solids, or residuals, to the river.

Consequently, Washington Aqueduct is in the process of evaluating water treatment residuals management options to minimize or eliminate the discharge of residuals to the Potomac River. The residuals management option that will ultimately be selected has a potential to affect the human environment, and thus development of the residuals management plan must comply with the National Environmental Policy Act (NEPA) and also Section 106 of the National Historic Preservation Act (NHPA).

A Description of Proposed Actions and Alternatives (DOPAA) as well as an Engineering Feasibility Study have been completed. This process has narrowed the list of potential alternatives from 26 alternatives to four, including the no-action alternative. These alternatives will be evaluated in the DEIS that is currently being prepared.

We have attached a brief description of the alternatives and also a copy of our Scope of Statement. The Scope of Statement describes in detail the technical approach for evaluating the alternatives in the DEIS.

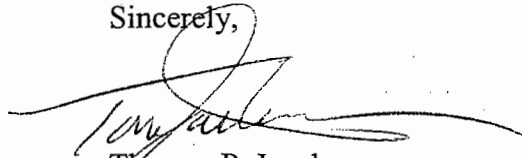
The complete text of the DOPAA, the Feasibility Study and the Scope of Statement are available on the project web page. <http://washingтонаqueduct.nab.usace.army.mil/aqueduct>.

We would like to schedule a meeting with you and your staff to discuss the project and the potential alternatives and to understand your possible concerns and issues. We would welcome a meeting at our facility, in case you would like to drive to the area in question, or we can meet at your offices. We will be contacting you very soon to set up a meeting.

In addition, we will be holding a public meeting in the auditorium of Sibley Memorial Hospital on September 7, 2004 at 7:00 PM in order to provide our stakeholders an opportunity to learn about the progress of the project, to see visual simulations of facilities for the different alternatives, and to ask questions to Washington Aqueduct directly.

If you have any questions please contact Mr. Michael Peterson at 202-764-0025.

Sincerely,



Thomas P. Jacobus
General Manager

Enclosures

Summary Description of Proposed Alternatives

A 20-year period of examination will form the basis for the DEIS. Consequently, residuals quantities and sizing of facilities will be based on anticipated water production over the 20-year period. Similarly, the evaluation of impacts of the alternatives will be based on the 20-year period of examination.

Alternative 2: Process Water Treatment Residuals at Dalecarlia WTP and Dispose in a Newly Constructed Dalecarlia Monofill. Process Forebay Residuals by Current Methods and Periodically Haul

Residuals from the Dalecarlia Sedimentation Basins and the Georgetown Reservoir would be collected and thickened/dewatered at the Dalecarlia WTP before being disposed of in a newly constructed Dalecarlia monofill. Residuals from the Forebay would be processed separately as is currently practiced and periodically hauled offsite or could also be disposed of in the Dalecarlia monofill.

Facilities. The site figure indicates the sedimentation basins to be upgraded, the preliminary location of thickening and dewatering facilities, and the approximate footprint of the monofill. As currently conceived, the monofill would be approximately 50 ft tall on the Dalecarlia Parkway side and 80 ft tall on the Dalecarlia Reservoir side. The footprint of the monofill is anticipated to occupy approximately 30 acres.

Conveyance and Transport. Pipelines would convey coagulated residuals from both the Dalecarlia sedimentation basins and the Georgetown Reservoir to the Dalecarlia thickening facility. After thickening and dewatering, onsite trucks would be used to haul the residuals to the monofill. On average, six onsite truck trips per day (6 days per week) would be required.

Alternative 5: Thicken Water Treatment Residuals at Dalecarlia WTP, Then Pump via a New Pipeline to Blue Plains. Process Forebay Residuals by Current Methods and Periodically Haul

This alternative would eliminate truck traffic associated with residuals on the roads surrounding the Washington Aqueduct Reservation by conveying coagulated residuals to the Blue Plains Wastewater Treatment Plant for further processing and disposal. Residuals from the Forebay would be processed separately as is currently practiced.

Facilities. This alternative would involve similar sedimentation basin modifications and new thickening facilities. Dewatering facilities would be located at Blue Plains.

Conveyance and Transport. Pipelines would convey coagulated residuals from both the onsite sedimentation basins and the Georgetown Reservoir to the Dalecarlia thickening facility. Another dedicated pair of pipelines within the right-of-way of the Potomac Interceptor would convey the thickened residuals to Blue Plains for final processing. These buried pipes would be approximately 10 miles in length and 12 inches in diameter.

Alternative 25: Process Water Treatment Residuals at the Dalecarlia WTP and Dispose via Contract Hauling. Process Forebay Residuals by Current Methods and Periodically Haul

This alternative consists of thickening and dewatering water treatment residuals at the Dalecarlia WTP. Residuals from the Dalecarlia sedimentation basins and the Georgetown Reservoir would be collected and thickened/dewatered at the Dalecarlia WTP. The disposal method would be contract hauling from Dalecarlia WTP to a permitted disposal facility. Residuals from the Forebay would be processed separately as is currently practiced and periodically hauled offsite or could also be disposed of onsite.

Facilities. The figures indicate the sedimentation basins to be upgraded and the preliminary location of thickening and dewatering facilities.

Conveyance and Transport. Pipelines would convey water treatment residuals from both the onsite sedimentation basins and the Georgetown Reservoir to the Dalecarlia thickening facility. After thickening and dewatering, the residuals would be hauled by truck to a permitted offsite disposal facility. The estimated average number of trucks for handling the residuals is approximately ten per day (during the 5-day workweek) at the 20-year predicted residuals production level.



DEPARTMENT OF THE ARMY
WASHINGTON AQUEDUCT
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
5900 MACARTHUR BOULEVARD, N.W.
WASHINGTON, D.C. 20016-2514

August 17, 2004

Office of the General Manager

Mr. Kevin Brandt, Superintendent
C&O Canal NHP Headquarters
1850 Dual Highway, Suite 100
Hagerstown, MD 21740

Dear Mr. Brandt:

I previously sent a letter to you on August 9, 2004 in part notifying you of a public meeting that Washington Aqueduct will be holding on September 7, 2004. The location of that meeting has been changed to the Dalecarlia Water Treatment Plant which is located at 5900 MacArthur Boulevard, NW, Washington DC 20016. The first part of the meeting will be an open house where members of Washington Aqueduct staff and its consultants will be available with displays and will be prepared to answer questions. That portion will be followed by a group meeting to summarize the material and address any stakeholder issues. The meeting will start at 6:30 pm, and we expect to conclude at 9:00 pm.

If you have any questions please contact Mr. Michael Peterson at 202-764-0025.

Sincerely,

A handwritten signature in black ink, appearing to read "Tom Jacobus", is written over a horizontal line.

Thomas P. Jacobus
General Manager



DEPARTMENT OF THE ARMY
WASHINGTON AQUEDUCT
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
5900 MACARTHUR BOULEVARD, N.W.
WASHINGTON, D.C. 20016-2514

August 23, 2004

Office of the General Manager

Mr. Robert Spagnoletti
Attorney General for the District of Columbia
1350 Pennsylvania Avenue, NW
Suite 409
Washington, DC 20004

Dear Mr. Spagnoletti:

Washington Aqueduct will be changing the way we have historically disposed of the solids that collect in the sedimentation basins at the Dalecarlia water treatment plant and the basins at Georgetown. I wanted to update you on the progress we are making as we analyze and subsequently select a preferred alternative for construction.

As you may know, we are operating under a Federal Facility Compliance Agreement issued by the United States Environmental Protection Agency Region III. That agreement and the accompanying National Pollutant Discharge Elimination System permit will cause us to completely cease returning the solids to the Potomac River by December 31, 2009. While that seems like a long time in the future, most of this time will be required for the construction of facilities and procurement of equipment.

We are at the stage where we have identified three feasible alternatives that currently match our screening criteria as well as the project purpose and need. The criteria include meeting the terms and conditions of the permit and compliance agreement, preserving the reliability and redundancy of the existing water production system and considering the economic effects of the various options.

We are beginning to acquire data for the Draft Environmental Impact Statement to evaluate these feasible alternatives. All of the environmental resources such as air quality, land use, noise, socioeconomic, transportation, etc. are included in this data acquisition process. We know that the collection, transport and disposal of the solids is going to change the way we currently operate and that both immediate neighbors as well as other stakeholders have an interest in not only the decision we make, but also the process we use to arrive at that decision.

Therefore, we are holding a public meeting that we have designed to provide up to date information on our progress and process. The first part of the meeting will be an open house where members of Washington Aqueduct staff and its consultants will be available with displays and will be prepared to answer questions. That portion will be followed by a group meeting to summarize the material and address issues you may have. The meeting will be held on September 7, 2004 at the Dalecarlia Water Treatment Plant at 5900 MacArthur Boulevard, NW, Washington D.C. The meeting will start at 6:30 pm, and we expect to conclude at 9:00 pm.

From a number of inquiries we have received, I believe that some individuals may have gotten the impression that a decision on which course of action to pursue has already been made. That is not correct. We are working with three options that achieve compliance with our permit in ways that have different measurable effects on peoples' lives and the environment.

One option involves local processing and hauling via commercial trucks to a disposal site outside the immediate area, such as farmlands. Another option will analyze an alternative to trucking the solids through the neighborhoods. This is the option that would essentially build a hill adjacent to the Dalecarlia Reservoir on land owned by Washington Aqueduct. The third option will analyze a smaller local collection and treatment facility and a pipeline in the trace of the major sewer that goes in the immediate vicinity of the Dalecarlia water treatment plant to the Blue Plains advanced wastewater treatment plant. The solids would then be disposed of along with the existing biosolids that are trucked daily from Blue Plains.

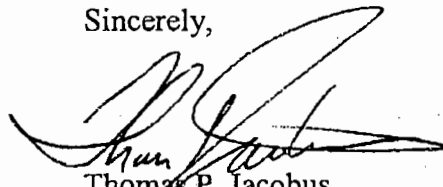
I have included with this letter a more detailed description of each alternative we plan to study as well as additional background on the project. Other documents are available on our project website at <http://washingtonaqueduct.nab.usace.army.mil/aqueduct.htm> such as the Description of Proposed Action and Alternatives, the Engineering Feasibility Study, and the recently completed Scope of Statement.

We plan to complete the Draft Environmental Impact Statement by mid-November and it will be available to the public for formal comment. It will contain the preferred alternative with the supporting rationale.

We would like to schedule a meeting with you or your staff to discuss the project and potential alternatives and to understand your possible concerns and issues. We would welcome a meeting at our facility, in case you would like to drive to the area in questions, or we can meet at your offices. We will be contacting you very soon to set up a meeting.

If you have any questions please contact Mr. Michael Peterson at 202-764-0025.

Sincerely,



Thomas P. Jacobus
General Manager

Enclosure



DEPARTMENT OF THE ARMY
WASHINGTON AQUEDUCT
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
5900 MACARTHUR BOULEVARD, N.W.
WASHINGTON, D.C. 20016-2514

August 9, 2004

Office of the General Manager

Mr. James R. Collier, P.E., Chief
Bureau of Environmental Quality
D.C. Department of Health
51 N Street, NE, 5th Floor
Washington, DC 20002

Dear Mr. Collier:

The purpose of this letter is to consult with your office regarding the Draft Environmental Impact Statement (DEIS) that is being prepared for Washington Aqueduct's Proposed Residuals Management Process in Washington, D.C. The DEIS evaluates the potential environmental consequences of implementing the alternative actions including a No-Action and preferred alternative.

Background:

The U.S. Army Corps of Engineers, Baltimore District, Washington Aqueduct operates the Dalecarlia and McMillan Water Treatment Plants in Washington, D.C., serving over one million persons in the District of Columbia and Northern Virginia area with potable water. The treatment process removes solid particles (river silt) from the Potomac River supply water, treats and disinfects the water, and distributes the finished water to the metropolitan service area. The solids removed during the treatment process have historically been returned to the river, but a recently reissued version of the Washington Aqueduct National Pollutant Discharge Elimination System (NPDES) permit (Permit No. DC 0000019) effectively precludes the discharge of water treatment solids, or residuals, to the river.

Consequently, Washington Aqueduct is in the process of evaluating water treatment residuals management options to minimize or eliminate the discharge of residuals to the Potomac River. The residuals management option that will ultimately be selected has a potential to affect the human environment, and thus development of the residuals management plan must comply with the National Environmental Policy Act (NEPA) and also Section 106 of the National Historic Preservation Act (NHPA).

A Description of Proposed Actions and Alternatives (DOPAA) as well as an Engineering Feasibility Study have been completed. This process has narrowed the list of potential alternatives from 26 alternatives to four, including the no-action alternative. These alternatives will be evaluated in the DEIS that is currently being prepared.

We have attached a brief description of the alternatives and also a copy of our Scope of Statement. The Scope of Statement describes in detail the technical approach for evaluating the alternatives in the DEIS.

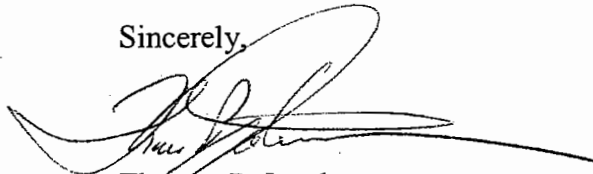
The complete text of the DOPAA, the Feasibility Study and the Scope of Statement are available on the project web page. <http://washingtonaqueduct.nab.usace.army.mil/aqueduct>.

We would like to schedule a meeting with you and your staff to discuss the project and the potential alternatives and to understand your possible concerns and issues. We would welcome a meeting at our facility, in case you would like to drive to the area in question, or we can meet at your offices. We will be contacting you very soon to set up a meeting.

In addition, we will be holding a public meeting in the auditorium of Sibley Memorial Hospital on September 7, 2004 at 7:00 PM in order to provide our stakeholders an opportunity to learn about the progress of the project, to see visual simulations of facilities for the different alternatives, and to ask questions to Washington Aqueduct directly.

If you have any questions please contact Mr. Michael Peterson at 202-764-0025.

Sincerely,

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Thomas P. Jacobus
General Manager

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Summary Description of Proposed Alternatives

A 20-year period of examination will form the basis for the DEIS. Consequently, residuals quantities and sizing of facilities will be based on anticipated water production over the 20-year period. Similarly, the evaluation of impacts of the alternatives will be based on the 20-year period of examination.

Alternative 2: Process Water Treatment Residuals at Dalecarlia WTP and Dispose in a Newly Constructed Dalecarlia Monofill. Process Forebay Residuals by Current Methods and Periodically Haul

Residuals from the Dalecarlia Sedimentation Basins and the Georgetown Reservoir would be collected and thickened/dewatered at the Dalecarlia WTP before being disposed of in a newly constructed Dalecarlia monofill. Residuals from the Forebay would be processed separately as is currently practiced and periodically hauled offsite or could also be disposed of in the Dalecarlia monofill.

Facilities. The site figure indicates the sedimentation basins to be upgraded, the preliminary location of thickening and dewatering facilities, and the approximate footprint of the monofill. As currently conceived, the monofill would be approximately 50 ft tall on the Dalecarlia Parkway side and 80 ft tall on the Dalecarlia Reservoir side. The footprint of the monofill is anticipated to occupy approximately 30 acres.

Conveyance and Transport. Pipelines would convey coagulated residuals from both the Dalecarlia sedimentation basins and the Georgetown Reservoir to the Dalecarlia thickening facility. After thickening and dewatering, onsite trucks would be used to haul the residuals to the monofill. On average, six onsite truck trips per day (6 days per week) would be required.

Alternative 5: Thicken Water Treatment Residuals at Dalecarlia WTP, Then Pump via a New Pipeline to Blue Plains. Process Forebay Residuals by Current Methods and Periodically Haul

This alternative would eliminate truck traffic associated with residuals on the roads surrounding the Washington Aqueduct Reservation by conveying coagulated residuals to the Blue Plains Wastewater Treatment Plant for further processing and disposal. Residuals from the Forebay would be processed separately as is currently practiced.

Facilities. This alternative would involve similar sedimentation basin modifications and new thickening facilities. Dewatering facilities would be located at Blue Plains.

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Alternative 25: Process Water Treatment Residuals at the Dalecarlia WTP and Dispose via Contract Hauling. Process Forebay Residuals by Current Methods and Periodically Haul

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August 17, 2004

Office of the General Manager

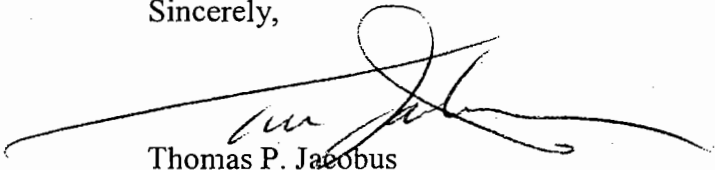
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If you have any questions please contact Mr. Michael Peterson at 202-764-0025.

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Thomas P. Jacobus
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5900 MACARTHUR BOULEVARD, N.W.
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February 18, 2005

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Mr. James R. Collier, P.E.
Chief, Bureau of Environmental Quality
D.C. Department of Health
51 N Street, NE, 5th Floor
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Dear Mr. Collier:

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The additional alternative would include collecting the water treatment residuals from the Dalecarlia Water Treatment Plant and the Georgetown Reservoir, transporting the material to a site on Washington Aqueduct property adjacent to Little Falls Road and Sibley Memorial Hospital in the District of Columbia. At this site the water treatment residuals would be thickened, dewatered, and disposed of by trucking to an off-site permitted disposal facility. The estimated daily average number of trucks needed to transport the water treatment residuals is approximately ten (during the 5-day workweek) at the 20-year predicted residuals production level. More details concerning this alternative, and others suggested by the public but determined to not be in conformance with the project purpose and need requirements, can be found in a document dated December 20, 2004. This document is included with the other project documents in the enclosed CD. These documents are also available on our project website at <http://washingtonaqueduct.nab.usace.army.mil/aqueduct.htm>.

Thank you for your efforts supporting the DEIS development process to date. If you have any questions, please contact Mr. Michael Peterson at 202-764-0025.

Sincerely,

Thomas P. Jacobus
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Enclosures



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August 9, 2004

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Fisheries and Wildlife Division
D.C. Department of Health
51 N Street, NE, 5th floor
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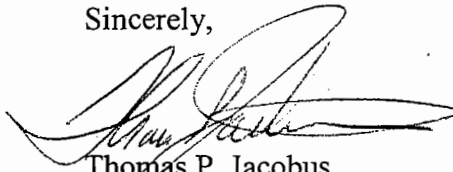
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In accordance with Section 7(c)(1) of the Endangered Species Act, we are requesting information on whether any proposed or listed species or their critical habitats are present within the project sites. Your response within 30 days from the receipt of this letter will be greatly appreciated. Similar requests are being sent to the United States Fish and Wildlife Service, the United States National Marine Fisheries Service and to the Maryland Department of Natural Resources – Wildlife Heritage Service.

If you have any questions please contact Mr. Michael Peterson at 202-764-0025.

Sincerely,

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Thomas P. Jacobus
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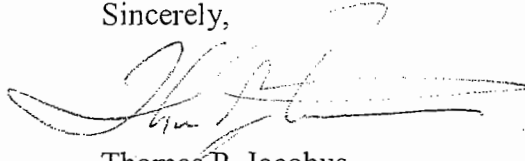
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Office of the General Manager

Mr. Tom Henderson, Administrator
Solid Waste Management
D.C. Department of Public Works
2000 14th Street, NW
Washington, DC 20001

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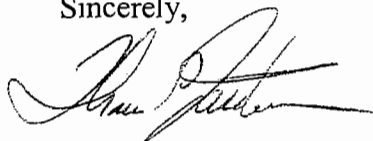
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Ms. Tania Tully
State Historic Preservation Officer
Maryland Historic Trust
Division of Historical and Cultural Programs
100 Community Place
Crownsville, MD 21032-2023

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The U.S. Army Corps of Engineers, Baltimore District, Washington Aqueduct operates the Dalecarlia and McMillan Water Treatment Plants in Washington, D.C., serving over one million persons in the District of Columbia and Northern Virginia area with potable water. The treatment process removes solid particles (river silt) from the Potomac River supply water, treats and disinfects the water, and distributes the finished water to the metropolitan service area. The solids removed during the treatment process have historically been returned to the river, but a recently reissued version of the Washington Aqueduct National Pollutant Discharge Elimination System (NPDES) permit (Permit No. DC 0000019) effectively precludes the discharge of water treatment solids, or residuals, to the river.

Consequently, Washington Aqueduct is in the process of evaluating water treatment residuals management options to minimize or eliminate the discharge of residuals to the Potomac River. The residuals management option that will ultimately be selected has a potential to affect the human environment, and thus development of the residuals management plan must comply with the National Environmental Policy Act (NEPA) and also Section 106 of the National Historic Preservation Act (NHPA).

A Description of Proposed Actions and Alternatives (DOPAA) as well as an Engineering Feasibility Study have been completed. This process has narrowed the list of potential alternatives from 26 alternatives to four, including the no-action alternative. These alternatives will be evaluated in the DEIS that is currently being prepared.

We have attached a brief description of the alternatives and also a copy of our Scope of Statement. The Scope of Statement describes in detail the technical approach for evaluating the alternatives in the DEIS.

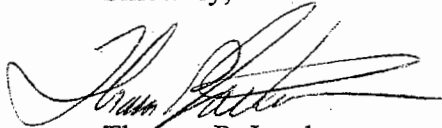
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We would like to schedule a meeting with you and your staff to discuss the project and the potential alternatives and to understand your possible concerns and issues. We would welcome a meeting at our facility, in case you would like to drive to the area in question, or we can meet at your offices. We will be contacting you very soon to set up a meeting.

In addition, we will be holding a public meeting in the auditorium of Sibley Memorial Hospital on September 7, 2004 at 7:00 PM in order to provide our stakeholders an opportunity to learn about the progress of the project, to see visual simulations of facilities for the different alternatives, and to ask questions to Washington Aqueduct directly.

If you have any questions please contact Mr. Michael Peterson at 202-764-0025.

Sincerely,

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Thomas P. Jacobus
General Manager

Enclosures

Summary Description of Proposed Alternatives

A 20-year period of examination will form the basis for the DEIS. Consequently, residuals quantities and sizing of facilities will be based on anticipated water production over the 20-year period. Similarly, the evaluation of impacts of the alternatives will be based on the 20-year period of examination.

Alternative 2: Process Water Treatment Residuals at Dalecarlia WTP and Dispose in a Newly Constructed Dalecarlia Monofill. Process Forebay Residuals by Current Methods and Periodically Haul

Residuals from the Dalecarlia Sedimentation Basins and the Georgetown Reservoir would be collected and thickened/dewatered at the Dalecarlia WTP before being disposed of in a newly constructed Dalecarlia monofill. Residuals from the Forebay would be processed separately as is currently practiced and periodically hauled offsite or could also be disposed of in the Dalecarlia monofill.

Facilities. The site figure indicates the sedimentation basins to be upgraded, the preliminary location of thickening and dewatering facilities, and the approximate footprint of the monofill. As currently conceived, the monofill would be approximately 50 ft tall on the Dalecarlia Parkway side and 80 ft tall on the Dalecarlia Reservoir side. The footprint of the monofill is anticipated to occupy approximately 30 acres.

Conveyance and Transport. Pipelines would convey coagulated residuals from both the Dalecarlia sedimentation basins and the Georgetown Reservoir to the Dalecarlia thickening facility. After thickening and dewatering, onsite trucks would be used to haul the residuals to the monofill. On average, six onsite truck trips per day (6 days per week) would be required.

Alternative 5: Thicken Water Treatment Residuals at Dalecarlia WTP, Then Pump via a New Pipeline to Blue Plains. Process Forebay Residuals by Current Methods and Periodically Haul

This alternative would eliminate truck traffic associated with residuals on the roads surrounding the Washington Aqueduct Reservation by conveying coagulated residuals to the Blue Plains Wastewater Treatment Plant for further processing and disposal. Residuals from the Forebay would be processed separately as is currently practiced.

Facilities. This alternative would involve similar sedimentation basin modifications and new thickening facilities. Dewatering facilities would be located at Blue Plains.

Conveyance and Transport. Pipelines would convey coagulated residuals from both the onsite sedimentation basins and the Georgetown Reservoir to the Dalecarlia thickening facility. Another dedicated pair of pipelines within the right-of-way of the Potomac Interceptor would convey the thickened residuals to Blue Plains for final processing. These buried pipes would be approximately 10 miles in length and 12 inches in diameter.

Alternative 25: Process Water Treatment Residuals at the Dalecarlia WTP and Dispose via Contract Hauling. Process Forebay Residuals by Current Methods and Periodically Haul

This alternative consists of thickening and dewatering water treatment residuals at the Dalecarlia WTP. Residuals from the Dalecarlia sedimentation basins and the Georgetown Reservoir would be collected and thickened/dewatered at the Dalecarlia WTP. The disposal method would be contract hauling from Dalecarlia WTP to a permitted disposal facility. Residuals from the Forebay would be processed separately as is currently practiced and periodically hauled offsite or could also be disposed of onsite.

Facilities. The figures indicate the sedimentation basins to be upgraded and the preliminary location of thickening and dewatering facilities.

Conveyance and Transport. Pipelines would convey water treatment residuals from both the onsite sedimentation basins and the Georgetown Reservoir to the Dalecarlia thickening facility. After thickening and dewatering, the residuals would be hauled by truck to a permitted offsite disposal facility. The estimated average number of trucks for handling the residuals is approximately ten per day (during the 5-day workweek) at the 20-year predicted residuals production level.



DEPARTMENT OF THE ARMY
WASHINGTON AQUEDUCT
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
5900 MACARTHUR BOULEVARD, N.W.
WASHINGTON, D.C. 20016-2514

August 17, 2004

Office of the General Manager

Ms. Tania Tully
State Historic Preservation Officer
Maryland Historic Trust
Division of Historical and Cultural Programs
100 Community Place
Crownsville, MD 21032-2023

Dear Ms. Tully:

I previously sent a letter to you on August 9, 2004 in part notifying you of a public meeting that Washington Aqueduct will be holding on September 7, 2004. The location of that meeting has been changed to the Dalecarlia Water Treatment Plant which is located at 5900 MacArthur Boulevard, NW, Washington DC 20016. The first part of the meeting will be an open house where members of Washington Aqueduct staff and its consultants will be available with displays and will be prepared to answer questions. That portion will be followed by a group meeting to summarize the material and address any stakeholder issues. The meeting will start at 6:30 pm, and we expect to conclude at 9:00 pm.

If you have any questions please contact Mr. Michael Peterson at 202-764-0025.

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Thomas P. Jacobus
General Manager



DEPARTMENT OF THE ARMY
WASHINGTON AQUEDUCT
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
5900 MACARTHUR BOULEVARD, N.W.
WASHINGTON, D.C. 20016-2514

February 18, 2005

Office of the General Manager

Ms. Tania Tully, State Historic Preservation Officer
Maryland Historical Trust
Division of Historical and Cultural Programs
100 Community Place
Crownsville, MD 21032-2023

Dear Ms. Tully:

The purpose of this letter is to update you on the progress of developing the Draft Environmental Impact Statement (DEIS) for Washington Aqueduct's Proposed Residuals Management Process in Washington, D.C. We previously submitted a consultation letter to your office on August 9, 2004. It included four proposed alternatives. That letter and attachment is enclosed. An additional alternative that was recommended by various stakeholders is now also under consideration, and we request you include this alternative with our original consultation request.

The additional alternative would include collecting the water treatment residuals from the Dalecarlia Water Treatment Plant and the Georgetown Reservoir, transporting the material to a site on Washington Aqueduct property adjacent to Little Falls Road and Sibley Memorial Hospital in the District of Columbia. At this site the water treatment residuals would be thickened, dewatered, and disposed of by trucking to an off-site permitted disposal facility. The estimated daily average number of trucks needed to transport the water treatment residuals is approximately ten (during the 5-day workweek) at the 20-year predicted residuals production level. More details concerning this alternative, and others suggested by the public but determined to not be in conformance with the project purpose and need requirements, can be found in a document dated December 20, 2004. This document is included with the other project documents in the enclosed CD. These documents are also available on our project website at <http://washingтонаqueduct.nab.usace.army.mil/aqueduct.htm>.

Thank you for your efforts supporting the DEIS development process to date. If you have any questions, please contact Mr. Michael Peterson at 202-764-0025.

Sincerely,

Thomas P. Jacobus
General Manager

Enclosures



DEPARTMENT OF THE ARMY
WASHINGTON AQUEDUCT
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
5900 MACARTHUR BOULEVARD, N.W.
WASHINGTON, D.C. 20016-2514

February 18, 2005

Office of the General Manager

Mr. Charles R. Loehr, Director
Montgomery County Department of Park & Planning
The Maryland-National Capital Park & Planning Commission
8787 Georgia Avenue
Silver Spring, Maryland 20910

Dear Mr. Loehr:

The purpose of this letter is to consult with your office regarding the Draft Environmental Impact Statement (DEIS) that is being prepared for Washington Aqueduct's Proposed Residuals Management Process in Washington, D.C. The DEIS evaluates the potential environmental consequences of implementing the alternative actions including a No-Action and preferred alternative.

Background:

The U.S. Army Corps of Engineers, Baltimore District, Washington Aqueduct operates the Dalecarlia and McMillan Water Treatment Plants in Washington, D.C., serving over one million persons in the District of Columbia and Northern Virginia area with potable water. The treatment process removes solid particles (river silt) from the Potomac River supply water, treats and disinfects the water, and distributes the finished water to the metropolitan service area. The solids removed during the treatment process have historically been returned to the river, but a recently reissued version of the Washington Aqueduct National Pollutant Discharge Elimination System (NPDES) permit (Permit No. DC 0000019) effectively precludes the discharge of water treatment solids, or residuals, to the river.

Consequently, Washington Aqueduct is in the process of evaluating water treatment residuals management options to minimize or eliminate the discharge of residuals to the Potomac River. The residuals management options that will ultimately be selected has potential to affect the human environment, and thus development of the residuals management plan must comply with the National Environmental Policy Act (NEPA) and also Section 106 of the National Historic Preservation Act (NHPA).

At this time, Washington Aqueduct has performed preliminary evaluation on 128 alternatives or options. Various stakeholders suggested 103 of these alternatives during various public comment periods that have been offered. The preliminary evaluation identified five of these alternatives, including the no-action alternative, that will be evaluated in detail in the DEIS.

We have attached a brief description of these five alternatives and also a CD containing all of the documents that we have developed as part of this project to date. Included is the Scope of Statement which describes in detail the technical approach for evaluating the alternatives in the DEIS. These documents are also available on our website which is located at:
<http://washingtonaqueduct.nab.usace.army.mil/aqueduct.htm>.

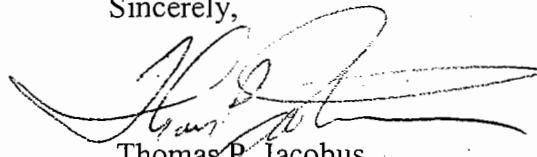
Additionally, 40 recently suggested alternatives are currently undergoing preliminary evaluation. If any of these alternatives are identified for evaluation in the DEIS, we will contact you and provide you with a description.

The process of evaluating the five alternatives in the DEIS has revealed significant obstacles that will not allow us to select Alternative A or Alternative B. In addition, because Alternative D (no-action alternative) would not allow compliance with our NPDES permit, it cannot be selected. Therefore, the two alternatives that could still be selected are Alternative C and Alternative E. Due to the proximity of the Capital Crescent Trail through the Dalecarlia Water Treatment Plant, there may be a potential for these two alternatives to impact users of the trail in different ways and to different extents. The potential impacts to the users of the trail will be detailed in the DEIS.

We would like to schedule a meeting with you and your staff to discuss the project and the potential alternatives and to understand your possible concerns and issues. We would welcome a meeting at our facility, in case you would like to visit the areas in question, or we can meet at your offices.

Please contact Mr. Michael Peterson at 202-764-0025 to arrange this meeting if you are interested, or with any other questions.

Sincerely,

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Thomas P. Jacobus
General Manager

Enclosures

Washington Aqueduct Residuals Processing Alternatives

The Washington Aqueduct operates the Dalecarlia and McMillan water treatment plants in Washington, D.C., serving over one million persons in the District of Columbia and Northern Virginia area with potable water. The treatment process adds coagulant to remove solid particles (river silt) from the water withdrawn from the Potomac River, filters and disinfects the water, and distributes the finished water to the metropolitan service area. The solids generated during the treatment process have historically been returned to the Potomac River, but a recently reissued version of Washington Aqueduct's National Pollutant Discharge Elimination System permit (Permit No. DC 0000019) effectively precludes the return of the of water treatment solids to the river.

Consequently, Washington Aqueduct is in the process of evaluating water treatment residuals management options to minimize or eliminate the discharge of residuals to the Potomac River. The residuals management option that will ultimately be selected has the potential to affect the human environment, and thus development of the residuals management plan must comply with the National Environmental Policy Act and also Section 106 of the National Historic Preservation Act.

The Draft Environmental Impact Statement will consider a 20-year period of operations. Consequently, residuals quantities and sizing of facilities will be based on anticipated water production over the 20-year period. Similarly, the evaluation of impacts of the alternatives will be based on the 20-year period of examination.

Alternative A: Process Water Treatment Residuals at Dalecarlia Water Treatment Plant and Dispose in a Newly Constructed Dalecarlia Monofill. Process Dalecarlia Reservoir Forebay Residuals by Current Methods and Periodically Haul

Residuals from the Dalecarlia sedimentation basins and the Georgetown sedimentation basins would be collected and thickened/dewatered at the Dalecarlia water treatment plant before being disposed of in a newly constructed Dalecarlia monofill. Residuals from the Dalecarlia Reservoir forebay would be processed separately as is currently practiced and periodically hauled offsite or could also be disposed of in the Dalecarlia monofill.

Facilities. Sedimentation basins at Dalecarlia and Georgetown would be upgraded. A residuals thickening and dewatering facility has been preliminarily located west of the Capital Crescent Trail as it passes through the Dalecarlia water treatment plant. The mechanical processing area of this facility could rise approximately 70 feet. The approximate location of the monofill is between the Dalecarlia Reservoir and the Dalecarlia Parkway. As currently conceived, the monofill would rise approximately 50 feet from ground level on the Dalecarlia Parkway side and 80 feet on the Dalecarlia Reservoir side. For comparison, the existing trees in that area are in the range of 100 feet tall. The monofill would occupy about 30 acres.

Conveyance and Transport. Pipelines would convey coagulated residuals from both the Dalecarlia sedimentation basins and the Georgetown sedimentation basins to the Dalecarlia thickening facility. After thickening and dewatering, the solids would be moved by truck across MacArthur Boulevard to the monofill. On average, six onsite truck trips per day (six days per week) would be required.

Alternative B: Process Water Treatment Residuals at the Dalecarlia Water Treatment Plant and Dispose via Contract Hauling. Process Dalecarlia Reservoir Forebay Residuals by Current Methods and Periodically Haul

This alternative consists of thickening and dewatering water treatment residuals at the Dalecarlia water treatment plant. Residuals from the Dalecarlia sedimentation basins and the Georgetown sedimentation basins would be collected and thickened/dewatered at the Dalecarlia water treatment plant. The disposal method would be contract hauling from Dalecarlia water treatment plant to a permitted disposal facility.

MORE ON REVERSE

Residuals from the Dalecarlia Reservoir forebay would be processed separately as is currently practiced and periodically hauled offsite or could also be disposed of onsite.

Facilities. The facilities to complete this option are similar to alternative A, but without the creation of the monofill on the Dalecarlia Reservoir grounds.

Conveyance and Transport. Pipelines would convey water treatment residuals from both the Dalecarlia sedimentation basins and the Georgetown sedimentation basins to the Dalecarlia thickening facility. After thickening and dewatering, the residuals would be hauled by truck to a permitted offsite disposal facility. The estimated average number of trucks for handling the residuals is approximately ten per day (during the five-day workweek) at the 20-year predicted residuals production level.

Alternative C: Thicken Water Treatment Residuals at Dalecarlia Water Treatment Plant, then Pump via a New Pipeline to Blue Plains. Process Dalecarlia Reservoir Forebay Residuals by Current Methods and Periodically Haul

This alternative would eliminate truck traffic associated with residuals on the roads surrounding the Washington Aqueduct Dalecarlia and Georgetown operations by conveying coagulated residuals to the Blue Plains advanced wastewater treatment plant for further processing and disposal. Residuals from the Dalecarlia Reservoir forebay would be processed separately as is currently practiced.

Facilities. This alternative would involve similar sedimentation basin modifications and new thickening facilities. Dewatering facilities would be located at Blue Plains.

Conveyance and Transport. Pipelines would convey coagulated residuals from both the onsite sedimentation basins and the Georgetown sedimentation basins to the Dalecarlia thickening facility. Another dedicated pair of pipelines within the right-of-way of the Potomac Interceptor sewer would convey the thickened residuals to Blue Plains for final processing. These buried pipes would be approximately 10 miles in length and 12 inches in diameter.

Alternative D: No-Action Alternative

This alternative would result in non-compliance with Permit No. DC 0000019 and the Clean Water Act.

Alternative E: Process Water Treatment Residuals at the Dalecarlia Water Treatment Plant and Dispose via Contract Hauling. Process Dalecarlia Reservoir Forebay Residuals by Current Methods and Periodically Haul

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Facilities. The facilities to complete this option are similar to alternative A and B, but located adjacent to Little Falls Road on existing Washington Aqueduct property and also without the creation of a monofill (Alternative A) on the Dalecarlia Reservoir grounds.

Conveyance and Transport. Pipelines would convey water treatment residuals from both the Dalecarlia sedimentation basins and the Georgetown sedimentation basins to the Dalecarlia thickening facility. After thickening and dewatering, the residuals would be hauled by truck to a permitted offsite disposal facility. The estimated average number of trucks for handling the residuals is approximately ten per day (during the five-day workweek) at the 20-year predicted residuals production level.



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WASHINGTON, D.C. 20016-2514

August 9, 2004

Office of the General Manager

Ms. Lisa Burcham, State Historic Preservation Officer
Historic Preservation Division
D.C. Office of Planning
801 North Capitol Street, NE, Suite 4000
Washington, DC 20002

Dear Ms. Burcham:

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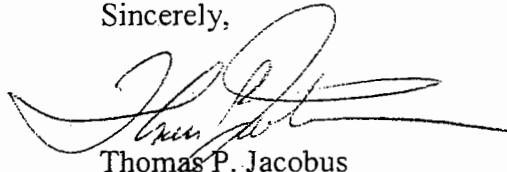
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If you have any questions please contact Mr. Michael Peterson at 202-764-0025.

Sincerely,



Thomas P. Jacobus
General Manager

Enclosures

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Facilities. This alternative would involve similar sedimentation basin modifications and new thickening facilities. Dewatering facilities would be located at Blue Plains.

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Alternative 25: Process Water Treatment Residuals at the Dalecarlia WTP and Dispose via Contract Hauling. Process Forebay Residuals by Current Methods and Periodically Haul

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August 17, 2004

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Thomas P. Jacobus
General Manager



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WASHINGTON AQUEDUCT
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
5900 MACARTHUR BOULEVARD, N.W.
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February 18, 2005

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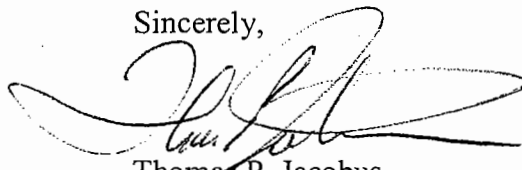
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The additional alternative would include collecting the water treatment residuals from the Dalecarlia Water Treatment Plant and the Georgetown Reservoir, transporting the material to a site on Washington Aqueduct property adjacent to Little Falls Road and Sibley Memorial Hospital in the District of Columbia. At this site the water treatment residuals would be thickened, dewatered, and disposed of by trucking to an off-site permitted disposal facility. The estimated daily average number of trucks needed to transport the water treatment residuals is approximately ten (during the 5-day workweek) at the 20-year predicted residuals production level. More details concerning this alternative, and others suggested by the public but determined to not be in conformance with the project purpose and need requirements, can be found in a document dated December 20, 2004. This document is included with the other project documents in the enclosed CD. These documents are also available on our project website at <http://washingtonaqueduct.nab.usace.army.mil/aqueduct.htm>.

Thank you for your efforts supporting the DEIS development process to date. If you have any questions, please contact Mr. Michael Peterson at 202-764-0025.

Sincerely,



Thomas P. Jacobus
General Manager

Enclosures



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5900 MACARTHUR BOULEVARD, N.W.
WASHINGTON, D.C. 20016-2514

August 9, 2004

Office of the General Manager

Ms. Lori Byrne, Environmental Review Specialist
MD DNR - Wildlife and Heritage Service
Tawes State Office Building, E-1
580 Taylor Avenue
Annapolis, MD 21401

Dear Ms. Byrne:

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Background:

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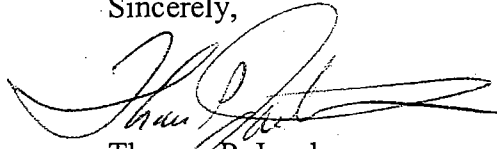
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If you have any questions please contact Mr. Michael Peterson at 202-764-0025.

Sincerely,

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Thomas P. Jacobus
General Manager

Enclosures

Summary Description of Proposed Alternatives

A 20-year period of examination will form the basis for the DEIS. Consequently, residuals quantities and sizing of facilities will be based on anticipated water production over the 20-year period. Similarly, the evaluation of impacts of the alternatives will be based on the 20-year period of examination.

Alternative 2: Process Water Treatment Residuals at Dalecarlia WTP and Dispose in a Newly Constructed Dalecarlia Monofill. Process Forebay Residuals by Current Methods and Periodically Haul

Residuals from the Dalecarlia Sedimentation Basins and the Georgetown Reservoir would be collected and thickened/dewatered at the Dalecarlia WTP before being disposed of in a newly constructed Dalecarlia monofill. Residuals from the Forebay would be processed separately as is currently practiced and periodically hauled offsite or could also be disposed of in the Dalecarlia monofill.

Facilities. The site figure indicates the sedimentation basins to be upgraded, the preliminary location of thickening and dewatering facilities, and the approximate footprint of the monofill. As currently conceived, the monofill would be approximately 50 ft tall on the Dalecarlia Parkway side and 80 ft tall on the Dalecarlia Reservoir side. The footprint of the monofill is anticipated to occupy approximately 30 acres.

Conveyance and Transport. Pipelines would convey coagulated residuals from both the Dalecarlia sedimentation basins and the Georgetown Reservoir to the Dalecarlia thickening facility. After thickening and dewatering, onsite trucks would be used to haul the residuals to the monofill. On average, six onsite truck trips per day (6 days per week) would be required.

Alternative 5: Thicken Water Treatment Residuals at Dalecarlia WTP, Then Pump via a New Pipeline to Blue Plains. Process Forebay Residuals by Current Methods and Periodically Haul

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Facilities. This alternative would involve similar sedimentation basin modifications and new thickening facilities. Dewatering facilities would be located at Blue Plains.

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DEPARTMENT OF THE ARMY
WASHINGTON AQUEDUCT
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
5900 MACARTHUR BOULEVARD, N.W.
WASHINGTON, D.C. 20016-2514

August 17, 2004

Office of the General Manager

Ms. Lori Byrne, Environmental Review Specialist
MD DNR - Wildlife and Heritage Service
Tawes State Office Building, E-1
580 Taylor Avenue
Annapolis, MD 21401

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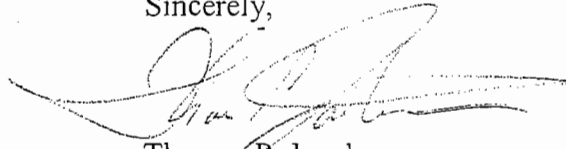
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Protected Resource Division
National Marine Fisheries Services
One Blackburn Drive
Gloucester, MA 01930-2298

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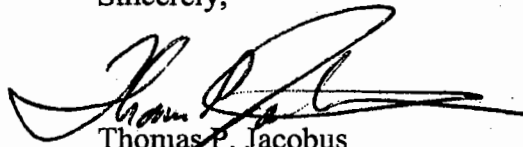
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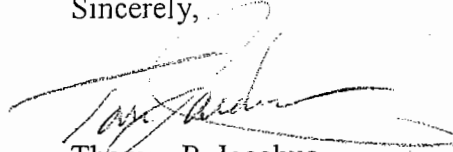
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August 9, 2004

Office of the General Manager

Ms. Patricia E. Gallagher, Executive Director
National Capital Planning Commission
401 9th Street, NW, Suite 500
Washington, DC 20576

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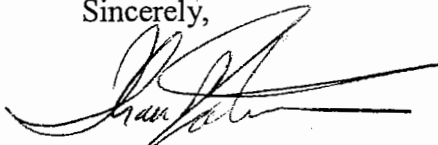
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We would like to schedule a meeting with you and your staff to discuss the project and the potential alternatives and to understand your possible concerns and issues. We would welcome a meeting at our facility, in case you would like to drive to the area in question, or we can meet at your offices. We will be contacting you very soon to set up a meeting.

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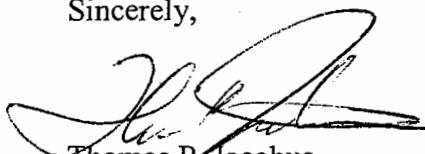
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The additional alternative would include collecting the water treatment residuals from the Dalecarlia Water Treatment Plant and the Georgetown Reservoir, transporting the material to a site on Washington Aqueduct property adjacent to Little Falls Road and Sibley Memorial Hospital in the District of Columbia. At this site the water treatment residuals would be thickened, dewatered, and disposed of by trucking to an off-site permitted disposal facility. The estimated daily average number of trucks needed to transport the water treatment residuals is approximately ten (during the 5-day workweek) at the 20-year predicted residuals production level. More details concerning this alternative, and others suggested by the public but determined to not be in conformance with the project purpose and need requirements, can be found in a document dated December 20, 2004. This document is included with the other project documents in the enclosed CD. These documents are also available on our project website at <http://washingtonaqueduct.nab.usace.army.mil/aqueduct.htm>.

Thank you for your efforts supporting the DEIS development process to date. If you have any questions, please contact Mr. Michael Peterson at 202-764-0025.

Sincerely,

A handwritten signature in black ink, appearing to read "Thomas P. Jacobus", is written over a horizontal line.

Thomas P. Jacobus
General Manager

Enclosures



DEPARTMENT OF THE ARMY
WASHINGTON AQUEDUCT
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
5900 MACARTHUR BOULEVARD, N.W.
WASHINGTON, D.C. 20016-2514

August 9, 2004

Office of the General Manager

Mr. Terry R. Carlstrom, Director
National Capital Region
National Park Service
1100 Ohio Drive, SW
Washington, DC 20242

Dear Mr. Carlstrom:

The purpose of this letter is to consult with your office regarding the Draft Environmental Impact Statement (DEIS) that is being prepared for Washington Aqueduct's Proposed Residuals Management Process in Washington, D.C. The DEIS evaluates the potential environmental consequences of implementing the alternative actions including a No-Action and preferred alternative.

Background:

The U.S. Army Corps of Engineers, Baltimore District, Washington Aqueduct operates the Dalecarlia and McMillan Water Treatment Plants in Washington, D.C., serving over one million persons in the District of Columbia and Northern Virginia area with potable water. The treatment process removes solid particles (river silt) from the Potomac River supply water, treats and disinfects the water, and distributes the finished water to the metropolitan service area. The solids removed during the treatment process have historically been returned to the river, but a recently reissued version of the Washington Aqueduct National Pollutant Discharge Elimination System (NPDES) permit (Permit No. DC 0000019) effectively precludes the discharge of water treatment solids, or residuals, to the river.

Consequently, Washington Aqueduct is in the process of evaluating water treatment residuals management options to minimize or eliminate the discharge of residuals to the Potomac River. The residuals management option that will ultimately be selected has a potential to affect the human environment, and thus development of the residuals management plan must comply with the National Environmental Policy Act (NEPA) and also Section 106 of the National Historic Preservation Act (NHPA).

A Description of Proposed Actions and Alternatives (DOPAA) as well as an Engineering Feasibility Study have been completed. This process has narrowed the list of potential alternatives from 26 alternatives to four, including the no-action alternative. These alternatives will be evaluated in the DEIS that is currently being prepared.

We have attached a brief description of the alternatives and also a copy of our Scope of Statement. The Scope of Statement describes in detail the technical approach for evaluating the alternatives in the DEIS.

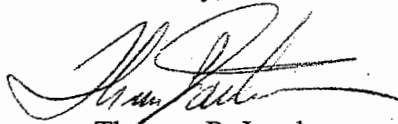
The complete text of the DOPAA, the Feasibility Study and the Scope of Statement are available on the project web page. <http://washingтонаqueduct.nab.usace.army.mil/aqueduct>.

We would like to schedule a meeting with you and your staff to discuss the project and the potential alternatives and to understand your possible concerns and issues. We would welcome a meeting at our facility, in case you would like to drive to the area in question, or we can meet at your offices. We will be contacting you very soon to set up a meeting.

In addition, we will be holding a public meeting in the auditorium of Sibley Memorial Hospital on September 7, 2004 at 7:00 PM in order to provide our stakeholders an opportunity to learn about the progress of the project, to see visual simulations of facilities for the different alternatives, and to ask questions to Washington Aqueduct directly.

If you have any questions please contact Mr. Michael Peterson at 202-764-0025.

Sincerely,

A handwritten signature in dark ink, appearing to read 'T. Jacobus', with a stylized flourish extending from the end.

Thomas P. Jacobus
General Manager

Enclosures

Summary Description of Proposed Alternatives

A 20-year period of examination will form the basis for the DEIS. Consequently, residuals quantities and sizing of facilities will be based on anticipated water production over the 20-year period. Similarly, the evaluation of impacts of the alternatives will be based on the 20-year period of examination.

Alternative 2: Process Water Treatment Residuals at Dalecarlia WTP and Dispose in a Newly Constructed Dalecarlia Monofill. Process Forebay Residuals by Current Methods and Periodically Haul

Residuals from the Dalecarlia Sedimentation Basins and the Georgetown Reservoir would be collected and thickened/dewatered at the Dalecarlia WTP before being disposed of in a newly constructed Dalecarlia monofill. Residuals from the Forebay would be processed separately as is currently practiced and periodically hauled offsite or could also be disposed of in the Dalecarlia monofill.

Facilities. The site figure indicates the sedimentation basins to be upgraded, the preliminary location of thickening and dewatering facilities, and the approximate footprint of the monofill. As currently conceived, the monofill would be approximately 50 ft tall on the Dalecarlia Parkway side and 80 ft tall on the Dalecarlia Reservoir side. The footprint of the monofill is anticipated to occupy approximately 30 acres.

Conveyance and Transport. Pipelines would convey coagulated residuals from both the Dalecarlia sedimentation basins and the Georgetown Reservoir to the Dalecarlia thickening facility. After thickening and dewatering, onsite trucks would be used to haul the residuals to the monofill. On average, six onsite truck trips per day (6 days per week) would be required.

Alternative 5: Thicken Water Treatment Residuals at Dalecarlia WTP, Then Pump via a New Pipeline to Blue Plains. Process Forebay Residuals by Current Methods and Periodically Haul

This alternative would eliminate truck traffic associated with residuals on the roads surrounding the Washington Aqueduct Reservation by conveying coagulated residuals to the Blue Plains Wastewater Treatment Plant for further processing and disposal. Residuals from the Forebay would be processed separately as is currently practiced.

Facilities. This alternative would involve similar sedimentation basin modifications and new thickening facilities. Dewatering facilities would be located at Blue Plains.

Conveyance and Transport. Pipelines would convey coagulated residuals from both the onsite sedimentation basins and the Georgetown Reservoir to the Dalecarlia thickening facility. Another dedicated pair of pipelines within the right-of-way of the Potomac Interceptor would convey the thickened residuals to Blue Plains for final processing. These buried pipes would be approximately 10 miles in length and 12 inches in diameter.

Alternative 25: Process Water Treatment Residuals at the Dalecarlia WTP and Dispose via Contract Hauling. Process Forebay Residuals by Current Methods and Periodically Haul

This alternative consists of thickening and dewatering water treatment residuals at the Dalecarlia WTP. Residuals from the Dalecarlia sedimentation basins and the Georgetown Reservoir would be collected and thickened/dewatered at the Dalecarlia WTP. The disposal method would be contract hauling from Dalecarlia WTP to a permitted disposal facility. Residuals from the Forebay would be processed separately as is currently practiced and periodically hauled offsite or could also be disposed of onsite.

Facilities. The figures indicate the sedimentation basins to be upgraded and the preliminary location of thickening and dewatering facilities.

Conveyance and Transport. Pipelines would convey water treatment residuals from both the onsite sedimentation basins and the Georgetown Reservoir to the Dalecarlia thickening facility. After thickening and dewatering, the residuals would be hauled by truck to a permitted offsite disposal facility. The estimated average number of trucks for handling the residuals is approximately ten per day (during the 5-day workweek) at the 20-year predicted residuals production level.



DEPARTMENT OF THE ARMY
WASHINGTON AQUEDUCT
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
5900 MACARTHUR BOULEVARD, N.W.
WASHINGTON, D.C. 20016-2514

August 17, 2004

Office of the General Manager

Mr. Terry R. Carlstrom, Director
National Capital Region
National Park Service
1100 Ohio Drive, SW
Washington, DC 20242

Dear Mr. Carlstrom:

I previously sent a letter to you on August 9, 2004 in part notifying you of a public meeting that Washington Aqueduct will be holding on September 7, 2004. The location of that meeting has been changed to the Dalecarlia Water Treatment Plant which is located at 5900 MacArthur Boulevard, NW, Washington DC 20016. The first part of the meeting will be an open house where members of Washington Aqueduct staff and its consultants will be available with displays and will be prepared to answer questions. That portion will be followed by a group meeting to summarize the material and address any stakeholder issues. The meeting will start at 6:30 pm, and we expect to conclude at 9:00 pm.

If you have any questions please contact Mr. Michael Peterson at 202-764-0025.

Sincerely,

A handwritten signature in black ink, appearing to read "T. P. Jacobus", is written over a horizontal line.

Thomas P. Jacobus
General Manager



DEPARTMENT OF THE ARMY
WASHINGTON AQUEDUCT
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
5900 MACARTHUR BOULEVARD, N.W.
WASHINGTON, D.C. 20016-2514

February 18, 2005

Office of the General Manager

Mr. Andy Moser
Chesapeake Bay Field Office
U.S. Fish and Wildlife Service
177 Admiral Cochrane Drive
Annapolis, MD 21401

Dear Mr. Moser:

The purpose of this letter is to update you on the progress of developing the Draft Environmental Impact Statement (DEIS) for Washington Aqueduct's Proposed Residuals Management Process in Washington, D.C. In addition, this is a formal request per Section 7(c)(1) of the Endangered Species Act for information on any proposed or listed species or their critical habitats are present within the project sites. We previously submitted a similar request to you on August 9, 2004 that included four proposed alternatives. That letter and attachment is enclosed. An additional alternative that was recommended by various stakeholders is now also under consideration, and we request you include this alternative with our original consultation request.

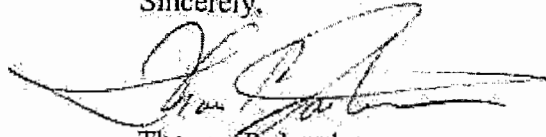
The additional alternative would include collecting the water treatment residuals from the Dalecarlia Water Treatment Plant and the Georgetown Reservoir, transporting the material to a site on Washington Aqueduct property adjacent to Little Falls Road and Sibley Memorial Hospital in the District of Columbia. At this site the water treatment residuals would be thickened, dewatered, and disposed of by trucking to an off-site disposal facility. The estimated daily average number of trucks needed to transport the water treatment residuals is approximately ten (during the 5-day workweek) at the 20-year predicted residuals production level. More details concerning this alternative, and others suggested by the public but determined to not be in conformance with the project purpose and need requirements, can be found in a document dated December 20, 2004. This document is included with the other project documents in the enclosed CD. These documents are also available on our project website at <http://washingtonaqueduct.nab.usace.army.mil/aqueduct.htm>.

In order to keep on our DEIS schedule, we request your response by March 22, 2005. Similar requests are being sent to the United States National Marine Fisheries Service, the District of Columbia Department of Health Fisheries and Wildlife Division, and to the Maryland Department of Natural Resources – Wildlife Heritage Service.

- 2 -

Thank you for your efforts to date on this project. If you have any questions please contact Mr. Michael Peterson at 202-764-0025.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Thomas P. Jacobus', with a long, sweeping horizontal line extending to the right.

Thomas P. Jacobus
General Manager

Enclosures



DEPARTMENT OF THE ARMY
WASHINGTON AQUEDUCT
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
5900 MACARTHUR BOULEVARD, N.W.
WASHINGTON, D.C. 20016-2514

August 9, 2004

Office of the General Manager

Mr. John Wolflin, Field Supervisor
Chesapeake Bay Field Office
U.S. Fish and Wildlife Service
177 Admiral Cochrane Drive
Annapolis, MD 21401

Dear Mr. Wolflin

The purpose of this letter is to consult with your office regarding the Draft Environmental Impact Statement (DEIS) that is being prepared for Washington Aqueduct's Proposed Residuals Management Process in Washington, D.C. The DEIS evaluates the potential environmental consequences of implementing the alternative actions including a No-Action and preferred alternative.

Background:

The U.S. Army Corps of Engineers, Baltimore District, Washington Aqueduct operates the Dalecarlia and McMillan Water Treatment Plants in Washington, D.C., serving over one million persons in the District of Columbia and Northern Virginia area with potable water. The treatment process removes solid particles (river silt) from the Potomac River supply water, treats and disinfects the water, and distributes the finished water to the metropolitan service area. The solids removed during the treatment process have historically been returned to the river, but a recently reissued version of the Washington Aqueduct National Pollutant Discharge Elimination System (NPDES) permit (Permit No. DC 0000019) effectively precludes the discharge of water treatment solids, or residuals, to the river.

Consequently, Washington Aqueduct is in the process of evaluating water treatment residuals management options to minimize or eliminate the discharge of residuals to the Potomac River. The residuals management option that will ultimately be selected has a potential to affect the human environment, and thus development of the residuals management plan must comply with the National Environmental Policy Act (NEPA) and also Section 106 of the National Historic Preservation Act (NHPA).

A Description of Proposed Actions and Alternatives (DOPAA) as well as an Engineering Feasibility Study have been completed. This process has narrowed the list of potential alternatives from 26 alternatives to four, including the no-action alternative. These alternatives will be evaluated in the DEIS that is currently being prepared.

We have attached a brief description of the alternatives and also a copy of our Scope of Statement. The Scope of Statement describes in detail the technical approach for evaluating the alternatives in the DEIS.

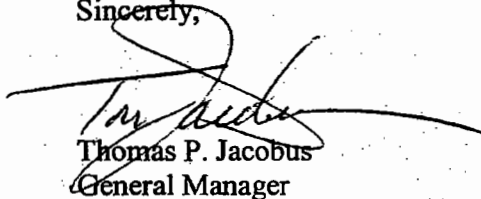
The complete text of the DOPAA, the Feasibility Study and the Scope of Statement are available on the project web page: <http://washingтонаqueduct.nab.usace.army.mil/aqueduct>.

We will be holding a public meeting in the auditorium of Sibley Memorial Hospital on September 7, 2004 at 7:00 PM in order to provide our stakeholders an opportunity to learn about the progress of the project, to see visual simulations of facilities for the different alternatives, and to ask questions to Washington Aqueduct directly.

In accordance with Section 7(c)(1) of the Endangered Species Act, we are requesting information on whether any proposed or listed species or their critical habitats are present within the project sites. Your response within 30 days from the receipt of this letter will be greatly appreciated. Similar requests are being sent to the District of Columbia Department of Health Fisheries and Wildlife Division, the United States National Marine Fisheries Service and to the Maryland Department of Natural Resources – Wildlife Heritage Service.

If you have any questions please contact Mr. Michael Peterson at 202-764-0025.

Sincerely,



Thomas P. Jacobus
General Manager

Enclosures

Summary Description of Proposed Alternatives

A 20-year period of examination will form the basis for the DEIS. Consequently, residuals quantities and sizing of facilities will be based on anticipated water production over the 20-year period. Similarly, the evaluation of impacts of the alternatives will be based on the 20-year period of examination.

Alternative 2: Process Water Treatment Residuals at Dalecarlia WTP and Dispose in a Newly Constructed Dalecarlia Monofill. Process Forebay Residuals by Current Methods and Periodically Haul

Residuals from the Dalecarlia Sedimentation Basins and the Georgetown Reservoir would be collected and thickened/dewatered at the Dalecarlia WTP before being disposed of in a newly constructed Dalecarlia monofill. Residuals from the Forebay would be processed separately as is currently practiced and periodically hauled offsite or could also be disposed of in the Dalecarlia monofill.

Facilities. The site figure indicates the sedimentation basins to be upgraded, the preliminary location of thickening and dewatering facilities, and the approximate footprint of the monofill. As currently conceived, the monofill would be approximately 50 ft tall on the Dalecarlia Parkway side and 80 ft tall on the Dalecarlia Reservoir side. The footprint of the monofill is anticipated to occupy approximately 30 acres.

Conveyance and Transport. Pipelines would convey coagulated residuals from both the Dalecarlia sedimentation basins and the Georgetown Reservoir to the Dalecarlia thickening facility. After thickening and dewatering, onsite trucks would be used to haul the residuals to the monofill. On average, six onsite truck trips per day (6 days per week) would be required.

Alternative 5: Thicken Water Treatment Residuals at Dalecarlia WTP, Then Pump via a New Pipeline to Blue Plains. Process Forebay Residuals by Current Methods and Periodically Haul

This alternative would eliminate truck traffic associated with residuals on the roads surrounding the Washington Aqueduct Reservation by conveying coagulated residuals to the Blue Plains Wastewater Treatment Plant for further processing and disposal. Residuals from the Forebay would be processed separately as is currently practiced.

Facilities. This alternative would involve similar sedimentation basin modifications and new thickening facilities. Dewatering facilities would be located at Blue Plains.

Conveyance and Transport. Pipelines would convey coagulated residuals from both the onsite sedimentation basins and the Georgetown Reservoir to the Dalecarlia thickening facility. Another dedicated pair of pipelines within the right-of-way of the Potomac Interceptor would convey the thickened residuals to Blue Plains for final processing. These buried pipes would be approximately 10 miles in length and 12 inches in diameter.

Alternative 25: Process Water Treatment Residuals at the Dalecarlia WTP and Dispose via Contract Hauling. Process Forebay Residuals by Current Methods and Periodically Haul

This alternative consists of thickening and dewatering water treatment residuals at the Dalecarlia WTP. Residuals from the Dalecarlia sedimentation basins and the Georgetown Reservoir would be collected and thickened/dewatered at the Dalecarlia WTP. The disposal method would be contract hauling from Dalecarlia WTP to a permitted disposal facility. Residuals from the Forebay would be processed separately as is currently practiced and periodically hauled offsite or could also be disposed of onsite.

Facilities. The figures indicate the sedimentation basins to be upgraded and the preliminary location of thickening and dewatering facilities.

Conveyance and Transport. Pipelines would convey water treatment residuals from both the onsite sedimentation basins and the Georgetown Reservoir to the Dalecarlia thickening facility. After thickening and dewatering, the residuals would be hauled by truck to a permitted offsite disposal facility. The estimated average number of trucks for handling the residuals is approximately ten per day (during the 5-day workweek) at the 20-year predicted residuals production level.

Washington Aqueduct Residuals Processing Alternatives

The Washington Aqueduct operates the Dalecarlia and McMillan water treatment plants in Washington, D.C., serving over one million persons in the District of Columbia and Northern Virginia area with potable water. The treatment process adds coagulant to remove solid particles (river silt) from the water withdrawn from the Potomac River, filters and disinfects the water, and distributes the finished water to the metropolitan service area. The solids generated during the treatment process have historically been returned to the Potomac River, but a recently reissued version of Washington Aqueduct's National Pollutant Discharge Elimination System permit (Permit No. DC 0000019) effectively precludes the return of the of water treatment solids to the river.

Consequently, Washington Aqueduct is in the process of evaluating water treatment residuals management options to minimize or eliminate the discharge of residuals to the Potomac River. The residuals management option that will ultimately be selected has the potential to affect the human environment, and thus development of the residuals management plan must comply with the National Environmental Policy Act and also Section 106 of the National Historic Preservation Act.

The Draft Environmental Impact Statement will consider a 20-year period of operations. Consequently, residuals quantities and sizing of facilities will be based on anticipated water production over the 20-year period. Similarly, the evaluation of impacts of the alternatives will be based on the 20-year period of examination.

Alternative A: Process Water Treatment Residuals at Dalecarlia Water Treatment Plant and Dispose in a Newly Constructed Dalecarlia Monofill. Process Dalecarlia Reservoir Forebay Residuals by Current Methods and Periodically Haul

Residuals from the Dalecarlia sedimentation basins and the Georgetown sedimentation basins would be collected and thickened/dewatered at the Dalecarlia water treatment plant before being disposed of in a newly constructed Dalecarlia monofill. Residuals from the Dalecarlia Reservoir forebay would be processed separately as is currently practiced and periodically hauled offsite or could also be disposed of in the Dalecarlia monofill.

Facilities. Sedimentation basins at Dalecarlia and Georgetown would be upgraded. A residuals thickening and dewatering facility has been preliminarily located west of the Capital Crescent Trail as it passes through the Dalecarlia water treatment plant. The mechanical processing area of this facility could rise approximately 70 feet. The approximate location of the monofill is between the Dalecarlia Reservoir and the Dalecarlia Parkway. As currently conceived, the monofill would rise approximately 50 feet from ground level on the Dalecarlia Parkway side and 80 feet on the Dalecarlia Reservoir side. For comparison, the existing trees in that area are in the range of 100 feet tall. The monofill would occupy about 30 acres.

Conveyance and Transport. Pipelines would convey coagulated residuals from both the Dalecarlia sedimentation basins and the Georgetown sedimentation basins to the Dalecarlia thickening facility. After thickening and dewatering, the solids would be moved by truck across MacArthur Boulevard to the monofill. On average, six onsite truck trips per day (six days per week) would be required.

Alternative B: Process Water Treatment Residuals at the Dalecarlia Water Treatment Plant and Dispose via Contract Hauling. Process Dalecarlia Reservoir Forebay Residuals by Current Methods and Periodically Haul

This alternative consists of thickening and dewatering water treatment residuals at the Dalecarlia water treatment plant. Residuals from the Dalecarlia sedimentation basins and the Georgetown sedimentation basins would be collected and thickened/dewatered at the Dalecarlia water treatment plant. The disposal method would be contract hauling from Dalecarlia water treatment plant to a permitted disposal facility.

MORE ON REVERSE

Residuals from the Dalecarlia Reservoir forebay would be processed separately as is currently practiced and periodically hauled offsite or could also be disposed of onsite.

Facilities. The facilities to complete this option are similar to alternative A, but without the creation of the monofill on the Dalecarlia Reservoir grounds.

Conveyance and Transport. Pipelines would convey water treatment residuals from both the Dalecarlia sedimentation basins and the Georgetown sedimentation basins to the Dalecarlia thickening facility. After thickening and dewatering, the residuals would be hauled by truck to a permitted offsite disposal facility. The estimated average number of trucks for handling the residuals is approximately ten per day (during the five-day workweek) at the 20-year predicted residuals production level.

Alternative C: Thicken Water Treatment Residuals at Dalecarlia Water Treatment Plant, then Pump via a New Pipeline to Blue Plains. Process Dalecarlia Reservoir Forebay Residuals by Current Methods and Periodically Haul

This alternative would eliminate truck traffic associated with residuals on the roads surrounding the Washington Aqueduct Dalecarlia and Georgetown operations by conveying coagulated residuals to the Blue Plains advanced wastewater treatment plant for further processing and disposal. Residuals from the Dalecarlia Reservoir forebay would be processed separately as is currently practiced.

Facilities. This alternative would involve similar sedimentation basin modifications and new thickening facilities. Dewatering facilities would be located at Blue Plains.

Conveyance and Transport. Pipelines would convey coagulated residuals from both the onsite sedimentation basins and the Georgetown sedimentation basins to the Dalecarlia thickening facility. Another dedicated pair of pipelines within the right-of-way of the Potomac Interceptor sewer would convey the thickened residuals to Blue Plains for final processing. These buried pipes would be approximately 10 miles in length and 12 inches in diameter.

Alternative D: No-Action Alternative

This alternative would result in non-compliance with Permit No. DC 0000019 and the Clean Water Act.

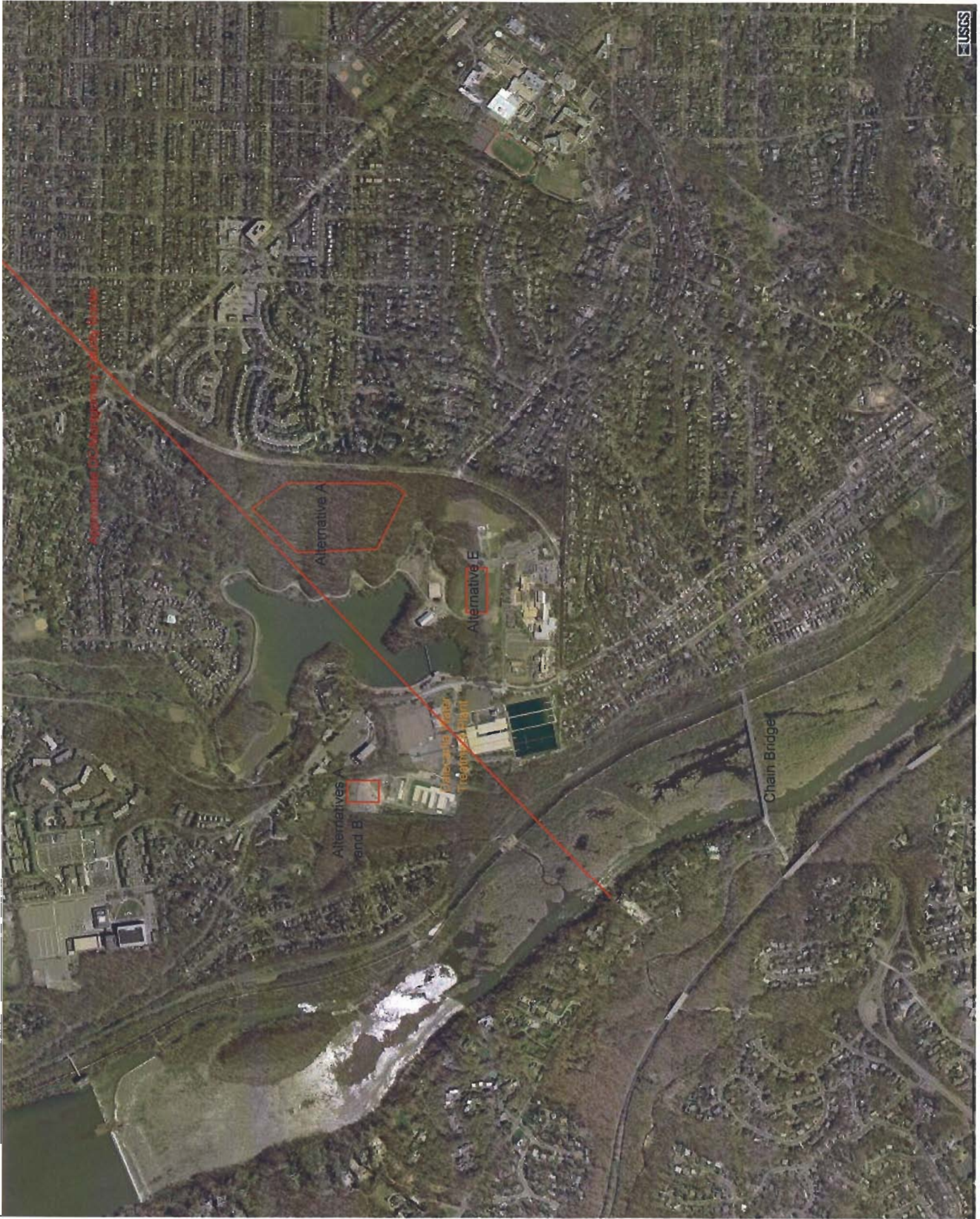
Alternative E: Process Water Treatment Residuals at the Dalecarlia Water Treatment Plant and Dispose via Contract Hauling. Process Dalecarlia Reservoir Forebay Residuals by Current Methods and Periodically Haul

This alternative consists of thickening and dewatering water treatment residuals at the Dalecarlia water treatment plant. Residuals from the Dalecarlia sedimentation basins and the Georgetown sedimentation basins would be collected and thickened/dewatered at the Dalecarlia water treatment plant. The disposal method would be contract hauling from Dalecarlia water treatment plant to a permitted disposal facility. Residuals from the Dalecarlia Reservoir forebay would be processed separately as is currently practiced and periodically hauled offsite or could also be disposed of onsite.

Facilities. The facilities to complete this option are similar to alternative A and B, but located adjacent to Little Falls Road on existing Washington Aqueduct property and also without the creation of a monofill (Alternative A) on the Dalecarlia Reservoir grounds.

Conveyance and Transport. Pipelines would convey water treatment residuals from both the Dalecarlia sedimentation basins and the Georgetown sedimentation basins to the Dalecarlia thickening facility. After thickening and dewatering, the residuals would be hauled by truck to a permitted offsite disposal facility. The estimated average number of trucks for handling the residuals is approximately ten per day (during the five-day workweek) at the 20-year predicted residuals production level.







DEPARTMENT OF THE ARMY
WASHINGTON AQUEDUCT
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
5900 MACARTHUR BOULEVARD, N.W.
WASHINGTON, D.C. 20016-2514

August 17, 2004

Office of the General Manager


Mr. John Wolflin, Field Supervisor
Chesapeake Bay Field Office
U.S. Fish and Wildlife Service
177 Admiral Cochrane Drive
Annapolis, MD 21401

Dear Mr. Wolflin:

I previously sent a letter to you on August 9, 2004 in part notifying you of a public meeting that Washington Aqueduct will be holding on September 7, 2004. The location of that meeting has been changed to the Dalecarlia Water Treatment Plant which is located at 5900 MacArthur Boulevard, NW, Washington DC 20016. The first part of the meeting will be an open house where members of Washington Aqueduct staff and its consultants will be available with displays and will be prepared to answer questions. That portion will be followed by a group meeting to summarize the material and address any stakeholder issues. The meeting will start at 6:30 pm, and we expect to conclude at 9:00 pm.

If you have any questions please contact Mr. Michael Peterson at 202-764-0025.

Sincerely,



Thomas P. Jacobus
General Manager

AGENCY RESPONSES ON ENDANGERED SPECIES ACT



Robert L. Ehrlich, Jr., Governor

Michael S. Steele, Lt. Governor

C. Ronald Franks, Secretary

October 12, 2004

Mr. Thomas P. Jacobus *J* *to Mike P.*
Department of the Army
Washington Aqueduct
US Army Corps of Engineers, Baltimore District
5900 MacArthur Boulevard, NW
Washington, DC 20016-2514

**RE: Environmental Review for Washington Aqueduct's Proposed Residuals
Management Process, Washington, D.C.**

Dear Mr. Jacobus:

The Wildlife and Heritage Service has determined that while most of the proposed alternatives are outside of our area of review, we would encourage that any alternative chosen, avoid impacts to the environmentally sensitive Potomac Gorge area. This area includes the Potomac River and the unique habitat along its banks and shorelines that support numerous rare, threatened and endangered species. It is also important to note that the utilization of state funds, or the need to obtain a state authorized permit may warrant additional evaluations that could lead to protection or survey recommendations by the Wildlife and Heritage Service. If this project falls into one of these categories, please contact us for further coordination.

Thank you for allowing us the opportunity to review this project. If you should have any further questions regarding this information, please contact me at (410) 260-8573.

Sincerely,

Lori A. Byrne,
Environmental Review Coordinator
Wildlife and Heritage Service
MD Dept. of Natural Resources

ER #2004.1717.dc
Cc: R. Wiegand, DNR



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 629 East Main Street, Richmond, Virginia 23219

Mailing address: P.O. Box 10009, Richmond, Virginia 23240

Fax (804) 698-4500 TDD (804) 698-4021

www.deq.state.va.us

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

Robert G. Burnley
Director

(804) 698-4000
1-800-592-5482

August 23, 2004

Mr. Thomas P. Jacobus
General Manager
Washington Aqueduct
Army Corps of Engineers, Baltimore District
5900 MacArthur Boulevard, N.W.
Washington, D.C. 20016

J *No enclosures received 27 Aug.*

RE: Washington Aqueduct Residuals Processing Alternatives

Dear Mr. Jacobus:

This letter responds to your August 12, 2004 letter to Mr. Robert Burnley, our Director, concerning the Washington Aqueduct's progress in changing the method of disposal of solids from the Dalecarlia water treatment plant and the basins at Georgetown.

The Department of Environmental Quality's Office of Environmental Impact Review coordinates Virginia's review of federal NEPA documents and responds to appropriate federal officials on behalf of the Commonwealth. In addition, this Office is the lead agency for Virginia's review of federal consistency determinations and certifications submitted pursuant to the Coastal Zone Management Act. Accordingly, we will be interested in coordinating the State's review of the Environmental Impact Statement (EIS) that you expect to complete in November.

Environmental Review and Scoping

We have shared your letter with the Department of Environmental Quality's Division of Water Quality and its Northern Virginia Regional Office. Depending on the implications of this undertaking for Virginia, we will include other state agencies, localities, and regional planning district commissions in the review of the EIS when it is published. Our typical review process includes the following state agencies (starred (*) agencies administer one or more of the Enforceable Policies of the Virginia Coastal Resources Management Program; see "Federal Consistency..." below):

Department of Environmental Quality, including:

- Office of Environmental Impact Review* (this Office)
- Northern Virginia Regional Office* (mentioned above)
- Division of Water Quality* (mentioned above)
- Waste Division
- Air Programs Coordination Division*

Mr. Thomas P. Jacobus
Page 2

Department of Game and Inland Fisheries*
Department of Agriculture and Consumer Services
Department of Conservation and Recreation,* including:
 Division of Chesapeake Bay Local Assistance*
 Division of Soil and Water Conservation*
 Division of Natural Heritage
Department of Historic Resources
Department of Mines, Minerals, and Energy
Department of Forestry.

In order to ensure an effective coordinated review of the EIS and the consistency determination, we will require 18 copies of the document when it is published. While this Office does not participate in scoping efforts beyond the advice given herein, other agencies are free to provide scoping comments concerning the EIS.

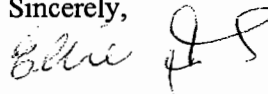
Federal Consistency under the Coastal Zone Management Act

Pursuant to the Coastal Zone Management Act of 1972, as amended, federal activities affecting Virginia's coastal resources or coastal uses must be consistent with the Virginia Coastal Resources Management Program (VCP) (see section 307(c)(1) of the Act and the Federal Consistency Regulations, 15 CFR Part 930, sub-part C). The Washington Aqueduct must provide a consistency determination which involves an analysis of the activities in light of the Enforceable Policies of the VCP (first enclosure), and a commitment to comply with the Enforceable Policies. In addition, we invite your attention to the Advisory Policies of the VCP (second enclosure). The federal consistency determination may be provided as part of the EIS or independently, depending on your agency's preference. Including the consistency determination in the EIS offers advantages of time and efficiency for both of us. Section 930.39 of the Federal Consistency Regulations gives content requirements for the consistency determination.

If you have questions about the environmental review process or the federal consistency review process, please feel free to call me (telephone 698-4325) or Charles Ellis of this Office (telephone 698-4488).

I hope this information is helpful to you. Thanks again for writing.

Sincerely,



Ellie L. Irons
Program Manager
Office of Environmental Impact Review

Enclosures

cc: John D. Bowden, DEQ-NVRO
Ellen Gilinsky, DEQ-Water



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
NORTHEAST REGION
One Blackburn Drive
Gloucester, MA 01930-2298

Thomas P. Jacobus *9 3/ Aug*
General Manager, Washington Aqueduct
Department of the Army
US Army Corps of Engineers, Baltimore District
5900 Macarthur Boulevard, NW
Washington, DC 20016-2514

AUG 26 2004

Dear Mr. Jacobus,

This is in response to your letter dated August 9, 2004 regarding the Draft Environmental Impact Statement (DEIS) that is being prepared for Washington Aqueduct's Proposed Residuals Management Process. The DEIS will evaluate the potential environmental consequences of implementing the four alternative actions, including a no-action alternative and a preferred alternative. Included in your letter was a request for information on the presence of any proposed or listed species or their critical habitats present within the project sites.

A population of the federally endangered shortnose sturgeon (*Acipenser brevirostrum*) exists in the Chesapeake Bay and several of its tidal tributaries, including the Potomac River. Welsh et al. (1999) summarizes historical and recent evidence of shortnose sturgeon presence in the Chesapeake Bay. The first published account of shortnose sturgeon in the Chesapeake system was an 1876 record from the Potomac River reported in a general list of fishes of Maryland (Uhler and Lugger 1876). Other historical records of shortnose sturgeon in the Chesapeake include: the Potomac River (Smith and Bean 1899), the upper Bay near the mouth of the Susquehanna River in the early 1980's, and the lower Bay near the mouths of the James and Rappahannock rivers in the late 1970's (Dadswell et al. 1984). As indicated previously, the FWS Reward Program for Atlantic Sturgeon began in 1996. Shortnose sturgeon have been incidentally captured via this program as well. As of May 2003, fifty-four shortnose sturgeon were captured via the reward program in the Chesapeake Bay and its tributaries – two from the Susquehanna Flats, eight from the Susquehanna River, two in the Bohemia River, six in the Potomac River, one in the Sassafras River, one in the Elk River, two south of the Bay Bridge near Kent Island, one near Howell Point, one just north of Hoopers Island, and two in Fishing Bay. The remaining shortnose sturgeon were captured in the upper Bay north of Hart-Miller Island. These fish were captured alive in either commercial gillnets, poundnets, fykenets, eel pots, hoop nets, or catfish traps.

The six shortnose sturgeon captured in the Potomac River were documented in the following locations: two at the mouth of the river near Ophelia, Virginia (May 3, 2000 and March 26, 2001); one at the mouth of the Saint Mary's River (April 21, 1998); and three at the mouth of the



Potomac Creek (May 17, 1996 and March 8, 2002). The locations of these captures are between 55 and 123 miles downstream from the Washington Aqueduct discharge sites near Little Falls.

As you know, a consultation pursuant to Section 7 of the Endangered Species Act (ESA) was conducted between the US Environmental Protection Agency (EPA) and the National Marine Fisheries Service (NOAA Fisheries) on the National Pollutant Discharge Elimination System (NPDES) Permit issued by EPA for the Washington Aqueduct as well as on the Washington Aqueduct's Federal Facilities Compliance Agreement (FFCA). This consultation culminated in a Biological Opinion issued by NOAA Fisheries on July 15, 2003. The incidental take statement (ITS), included with the BO pursuant to Section 7 (b)(4) of the ESA, states that in the event that the bypass provision is invoked one time during the five year duration of the permit and a discharge occurs during the prohibited time period either between March 1 and May 15 or when Potomac River water temperatures near Little Falls exceed 8°C (when shortnose sturgeon are expected to be present), it will result in the incidental take through injury and/or mortality of all shortnose sturgeon eggs and larvae present within 144 m of Outfall 002 and 453 m of Outfalls 003 and 004.

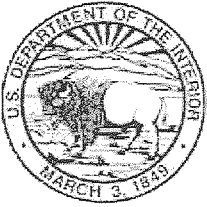
The FFCA for the Washington Aqueduct requires that an alternative to discharging into the Potomac River be implemented by the end of 2009. For this reason, NOAA Fisheries understands that the no-action alternative is not feasible for the continued operation of the Washington Aqueduct because it would lead to the continued discharge of sediment into the Potomac River. NOAA Fisheries encourages the development of alternatives that do not require the discharge of effluent or sediment into the Potomac River or its tributaries and looks forward to reviewing the EIS once it is developed. Should you have any questions regarding these comments, please contact Julie Crocker at (978)281-9328 x6350.

Sincerely,



Mary A. Colligan
Assistant Regional Administrator
for Protected Resources

Cc: Scida, F/NER3
Letzkus, EPA



IN REPLY REFER TO:

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
Custom House, Room 244
200 Chestnut Street
Philadelphia, Pennsylvania 19106-2904



May 31, 2005

ER 05/352

Mr. Thomas P. Jacobus
General Manager
Washington Aqueduct
U.S. Army Corps of Engineers, Baltimore District
5900 MacArthur Boulevard, N.W.
Washington, D.C. 20016-2514

Dear Mr. Jacobus:

The Department of the Interior (Department) has reviewed the Draft Environmental Impact Statement (DEIS) for a Proposed Water Treatment Residuals Management Process for the Washington Aqueduct, Washington, D.C. Please give careful consideration to the following comments.

General Comments

The DEIS adequately addresses most issues that fall within the jurisdiction or special expertise of the Department. The following comments, prepared by the U.S. Fish and Wildlife Service, concern endangered species and follow the format of the DEIS.

3 Existing Conditions

3.4.1 Aquatic Special Status (Rare, Threatened, and Endangered) Species p.3-10 Dwarf Wedge Mussel

We recommend changing the last sentence of this paragraph to read: "Because there have been no documented records for the dwarf wedge mussel in the mainstem Potomac River in the District of Columbia for over 100 years in spite of significant survey effort, the Fish and Wildlife Service does not consider the species to be present in the Potomac River mainstem in the study reach."

3.5.1 Terrestrial Special Status (Rare, Threatened, and Endangered) Species p.3-19, first full paragraph

This paragraph should be revised to indicate that the Eastern puma, dwarf wedge mussel, and small-whorled pogonia occurred *historically* in the District of Columbia or adjacent Montgomery County, Maryland, but are not considered extant there. The eastern puma is extirpated from D.C. and vicinity and should not be mentioned again in this document. The last record of the dwarf wedge

mussel in D.C. is from 1856, while the small-whorled pogonia, which once was found in Montgomery County near the D.C. line, has not been documented there since 1930.

4 **Impacts Evaluation**

4.5.3 Impact Evaluation by Alternative and Option

We concur with the conclusions of this section, that none of the alternatives under consideration will impact or adversely impact any endangered or threatened aquatic species [of the Potomac and Anacostia Rivers] under the jurisdiction of the U.S. Fish and Wildlife Service. However, we believe that these conclusions, made individually during the discussions of each of the alternatives, should be more explicitly stated.

4.6.3.1 Alternative A—Dewatering at Northwest Dalecarlia Processing Site and Disposal by Monofill p. 4-23, second paragraph (**Monofill**), last sentence

We concur with the conclusion that there would not be any impact to special status species, *with the possible exception* of the Hay's spring amphipod.

p. 4-23, third paragraph (**Special Status Species**)

Any reference to the eastern puma should be removed for the reasons stated previously. Although the Hay's spring amphipod is known only from the Rock Creek watershed in D.C., it is possible that it also inhabits adjacent watersheds such as that of Little Falls Creek. Therefore, surveys for this species, by a species expert, are recommended in the area to be affected by the monofill, should this alternative be pursued.

4.6.3.2 Alternative B—Dewatering at Northwest Dalecarlia Processing Site and Disposal by Trucking

We concur that no impacts to any Federally listed species are expected to occur due to this alternative.

4.6.3.3 Alternative C—Thickening and piping to Blue Plains AWWTP

Special Status Species (third heading under Alternative C)

Bald eagles nest about three quarters of a mile east of the proposed pipeline route, near the confluence of the Potomac and Anacostia Rivers. Because of the distance between the nest and the proposed pipeline and the method (directional drilling) proposed for pipeline installation, adverse impacts to nesting eagles are unlikely. No other Federally listed species under Fish and Wildlife Service jurisdiction are known to occur in the area affected by this alternative. This information should be included in this section of the EIS.

4.6.3.4 Alternative D—No Action Alternative

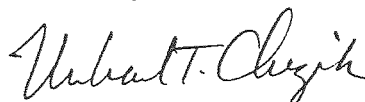
Special Status Species (first heading under Alternative D)

We concur with the conclusion that no impacts to any Federally listed threatened or endangered terrestrial species are expected to occur due to this alternative.

4.6.3.5 Alternative E—Dewatering at East Dalecarlia Processing Site and Disposal by Trucking **Special Status Species** (first heading under Alternative E)
No Federally listed species are known to occur in the area affected by this alternative; therefore, no effects on Federally listed species are expected. This information should be included in this section of the EIS.

Thank you for the opportunity to comment. If you have any questions regarding these comments, please contact the U.S. Fish and Wildlife Service's Andy Moser in Annapolis, Maryland at (410) 573-4537.

Sincerely,


A handwritten signature in black ink, appearing to read "Michael T. Chezik". The signature is fluid and cursive, with the first name "Michael" and last name "Chezik" clearly distinguishable.

Michael T. Chezik
Regional Environmental Officer

cc:

A. Moser. FWS, Annapolis, MD

CONVERSATION RECORD

TYPE:		<input type="checkbox"/> VISIT		<input type="checkbox"/> CONFERENCE		<input checked="" type="checkbox"/> TELEPHONE	
DATE: 8/23/05		TIME: 4:30PM				<input checked="" type="checkbox"/> INCOMING <input type="checkbox"/> OUTGOING	
NAME OF PERSON CONTACTED:		ORGANIZATION:		PHONE NO:			
Chris Guy		Chesapeake Bay Field Office, U.S. Fish and Wildlife Service		410-573-4529			
SUBJECT:		U.S. Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.)					
SUMMARY:		I called and left a message for Mr. Guy, who is tasked with identifying concerns related to the U.S. Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.) on behalf of the Chesapeake Bay Field Office of the U.S. Fish and Wildlife Service. Mr. Guy returned my phone call at 4:30 PM on August 23, 2005. Mr. Guy was familiar with the Washington Aqueduct proposed residuals management process Environmental Impact Statement and indicated that he had no U.S. Fish and Wildlife Coordination Act concerns related to it. He indicated that the letter signed by Mr. Michael T. Cheznik, the Regional Environmental Officer for the U.S. Department of Interior, was representative of the extent of comments from the Chesapeake Field Office of the U.S. Fish and Wildlife Service.					
ACTION REQUIRED:		None.					
ACTION TAKEN:		None.					
NAME OF PERSON DOCUMENTING CONVERSATION: Michael C. Peterson							
SIGNATURE & DATE:		 23 Aug 05					

CH2MHILL TELEPHONE CONVERSATION RECORD

Call To:

Ira Palmer
D.C. Department of Health
Fisheries and Wildlife Division

Phone No.: (202) 535-2266**Date:** August 30 and 31, 2005**Call From:** Laura Haught/CH2M HILL**Subject:** Washington Aqueduct EIS - Threatened and Endangered Species
Coordination

I called and left messages for Mr. Palmer on August 30th and 31st regarding threatened and endangered species coordination for the Washington Aqueduct EIS. To date a response has not been received from the two letters mailed to Mr. Palmer's office asking for consultation for potential impacts to rare, threatened, or endangered species from this project. A letter was received on the DEIS from the D.C. Department of Health; this agency response to the project did not list any proposed or listed species or their critical habitats within the project site.

CH2MHILL TELEPHONE CONVERSATION RECORD

Call To:

Lori Byrne
MD Dept of Natural Resources
Natural Heritage Division

Phone No.: (410)260-8573**Date:** August 30 and 31, 2005**Call From:** Laura Haught/CH2M HILL**Subject:** Washington Aqueduct EIS - Threatened and Endangered Species
Coordination

I called and left messages for Ms. Byrne on August 30th and 31st regarding threatened and endangered species coordination for the Washington Aqueduct EIS.

Reason for the call

A response to our letter dated August 2004 was received in October 2004, however, the response was rather vague. In addition a response has not been received from the second letter mailed in February 2005 asking for an update to the consultation for potential impacts to rare, threatened, or endangered species from this project along the pipeline route.

CONSULTATION LETTERS TO AGENCIES CONCERNING
PUBLIC ALTERNATIVES



DEPARTMENT OF THE ARMY
WASHINGTON AQUEDUCT
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
5900 MACARTHUR BOULEVARD, N.W.
WASHINGTON, D.C. 20016-2514

December 29, 2004

Office of the General Manager

Mr. Terry R. Carlstrom, Director
National Capital Region
National Park Service
1100 Ohio Drive, SW
Washington, DC 20242

Dear Mr. Carlstrom:

To comply with our NPDES permit concerning discharges from Washington Aqueduct's water treatment operations – specifically the solids from the sedimentation basins – we are performing an analysis of options available under the provisions of NEPA.

We have briefed NPS staff from GWMP, C&O Canal Historic Park, Rock Creek Park, National Mall Memorials and Parks and others from your regional office to inform them of the progress of our investigations and how the alternatives under consideration might affect land, roads and national memorials and monuments managed by the Department of the Interior.

One alternative that involves a pipeline from the Dalecarlia site in NW Washington to the Blue Plains waste water treatment plant has been eliminated from consideration as the potential preferred alternative because of disruption of public spaces, excessive costs and time delay in construction a pipeline through DOI controlled property and because the capacity and future operating regime of WASA's waste water treatment plant are not consistent with delivering our solids to them.

One modification to an alternative being studied would be to build a road from the west boundary of the Dalecarlia WTP to the Clara Barton Parkway though NPS land. This road would provide an alternate access to a dewatering facility constructed on the Dalecarlia site that would eliminate truck traffic through residential neighborhoods. Presently there are no access routes to the Dalecarlia site that do not go through residential neighborhoods. To accomplish this WA would need permission from NPS to acquire permanent access to a parcel containing the to-be-constructed road as well as permission to use Clara Barton Parkway as a route for the trucks to get either to Canal Road or to Interstate 495. On average, there would be approximately nine truckloads of solids per day leaving this facility, except on infrequent, peak residuals production days, when the number of trucks could be somewhat higher. A sketch of that alternative with this modification is enclosed.

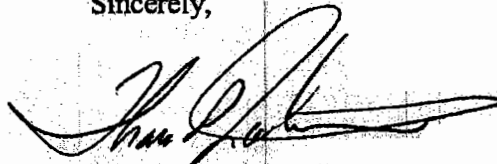
An additional alternative is currently under consideration. The concept for this alternative is to locate the dewatering facilities on the grounds of the Navy's Carderock facility. At this point, we have requested a decision, but have not received a formal indication from the Navy as to whether they would allow the Army (i.e., the Corps of Engineers) to lease sufficient property from them to accommodate the dewatering facility. Our request for access to the Navy installation must go before their planning board. We requested that we be placed on the agenda for the next board meeting in mid-January.

If the Navy agrees to accommodating our dewatering operations we will need your comment on whether this potential facility would adhere to the MOU that the Navy has with NPS relating to the view shed from the Clara Barton Parkway. Further, we would require an average of nine truckloads per day of solids, except on infrequent, peak residuals production days, when the number of trucks could be higher, to be taken from the potential dewatering facility for disposal at an off-site location. In addition to your comment on the view shed, we will need your comment on the availability of using the parkway as a route from the Navy site to the I-495.

Please comment on the concept of leaving the Dalecarlia site and accessing the Clara Barton parkway as soon as practicable via a letter back to us. That will become part of the supporting documentation in the EIS for that particular option.

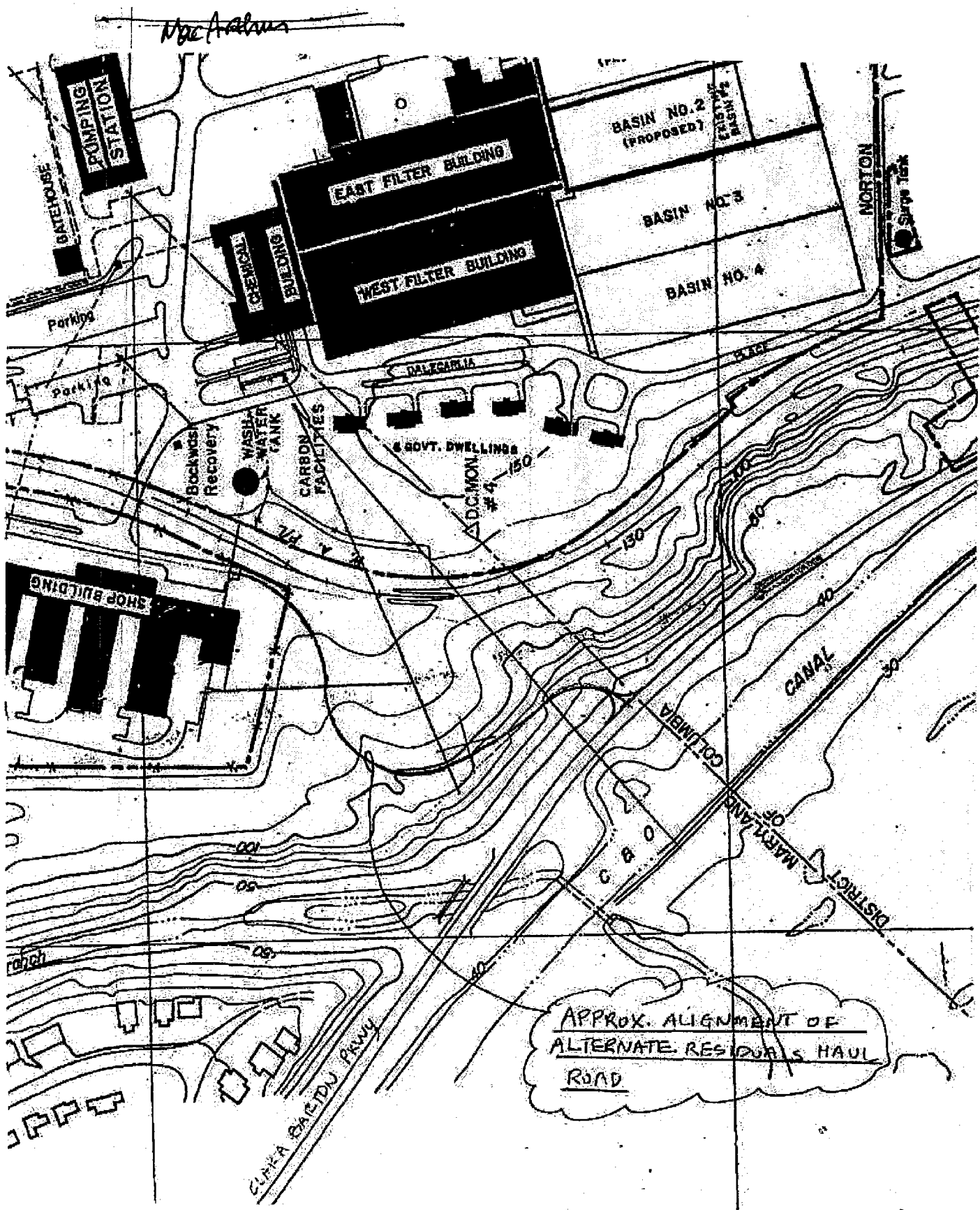
Thank you for your consideration of this matter.

Sincerely,

A handwritten signature in black ink, appearing to read 'Tom Jacobus', with a stylized flourish extending to the right.

Thomas P. Jacobus
General Manager

Enclosure



WASHINGTON AQUEDUCT RESIDUALS PROJECT
1"=200'



DEPARTMENT OF THE ARMY
WASHINGTON AQUEDUCT
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
5900 MACARTHUR BOULEVARD, N.W.
WASHINGTON, D.C. 20016-2514

March 3, 2005

Office of the General Manager

Mr. Thomas O. Heikkinen, Chief of Plant Operations
Washington Suburban Sanitary Commission
14501 Sweitzer Lane
Laurel, Maryland 20707

Dear Mr. Heikkinen:

As you know we are preparing an Environmental Impact Statement to address the consequences of options developed in our feasibility study to collect and dispose of water treatment solids.

I have previously discussed with you one of the options that would involve piping solids generated by Washington Aqueduct to a WSSC treatment plant where they would be mixed with your solids and disposed of.

I am attaching a record of the e-mail correspondence.

In finalizing the work on the Draft EIS, we believe it would be better if we had a letter on your corporate letterhead restating the WSSC position.

We would appreciate receiving this by March 25 so that we can appropriately compile the administrative record.

Thank you.

Sincerely,

Thomas P. Jacobus
General Manager

Enclosure

Jacobus, Thomas P WAD

From: Heikkinen, Tom [tHeikki@wsscwater.com]
Sent: Wednesday, December 01, 2004 4:50 PM
To: Jacobus, Thomas P WAD; Charlie Crowder
Cc: chuckmurray
Subject: RE: Washington Aqueduct Residuals Processing Project

Tom J.,

We considered this idea in the past and came to the conclusion that it was not in the best interest of the Commission to have such a large portion of the material being processed at our Potomac Solids Facility originating from a non-Commission source. That assessment still stands. I wish you luck in selecting a feasible alternative for your project.

Tom Heikkinen
Chief of Plant Operations
WSSC Production Team
301.206.7010 office

-----Original Message-----

From: Jacobus, Thomas P WAD [mailto:Thomas.P.Jacobus@wad01.usace.army.mil]
Sent: Wednesday, December 01, 2004 4:16 PM
To: Charlie Crowder; Tom Heikkinen
Cc: chuckmurray
Subject: Washington Aqueduct Residuals Processing Project

Charlie and Tom,

We're nearing the end of the analytical work in preparing our Draft Environmental Impact Statement for our solids project. We're looking at three alternatives: Collect and thicken and send to Blue Plains for further treatment and disposal from there; collect, thicken and dewater on site at the Dalecarlia Water Treatment Plant and then either store in a monofill on the grounds of the Dalecarlia Reservoir (that would be constructed) or truck from Dalecarlia to an off-site disposal location.

Charlie will recall this, but since I dealt with Chuck Murray at the time, you won't, Tom.

In January 2003, I paid a visit to each of your offices. At that time we were very close to the end of the permit process with EPA Region 3 and it was clear that there would be a permit that required the collection and disposal of the solids in some way that didn't involve the Potomac River. We were briefing EPA on the range of options we believed could be used to alternatively handle the solids.

Because we knew that trucking in the local neighborhoods was not favored by many and that the solids composition may be inconsistent with the process used at Blue Plains, we wanted to be very open to other ideas.

Since each of you had or were soon to have solids processing facilities on site at Corbalis and Potomac respectively, I inquired about your corporate interest in receiving solids from Washington Aqueduct to be processed for a fee (plus whatever other capital improvements might be necessary at your plants).

Tom, after my meeting with Chuck at WSSC, I left with the response (verbal) that he did not believe it was in WSSC's current or future interest to process water treatment solids for others.

3/3/2005

Charlie after listening to my presentation you asked for some time to reflect. You then subsequently communicated to me that at that stage of the development of the options you thought it best if Fairfax Water was not considered as a receiver and processor of the solids.

What I am requesting now is to ascertain if there has been any change in your evaluation of the situation with respect to your interest in receiving solids from Washington Aqueduct for processing at your plants.

Thank you for your consideration

Tom J
202-764-0031

3/3/2005



DEPARTMENT OF THE ARMY
WASHINGTON AQUEDUCT
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
5900 MACARTHUR BOULEVARD, N.W.
WASHINGTON, D.C. 20016-2514

March 3, 2005

Office of the General Manager

Central Intelligence Agency
ATTN: Chief of Facilities Support
5X62 NHB
Washington DC 20505

Sent Via Facsimile (703) 905-5544 (original to follow via U.S. mail)

Dear Sir or Madam:

The purpose of this request is to determine if it would be to the benefit of your agency to lease/license approximately six acres of land at the Langley site to the US Army Corps of Engineers for the purpose of constructing and operating a facility to dewater and truck away solids produced as a consequence of the operation of the Dalecarlia and McMillan water treatment plants in the District of Columbia.

The Washington Aqueduct is in the process of complying with a Federal Facilities Compliance Order accompanying a National Pollutant Discharge Elimination System Permit that will require that the sediment removed during the production of drinking water no longer be returned to the Potomac River. We have evaluated many different ideas for obtaining compliance and are nearing the end of the preparation of a Draft Environmental Impact Statement. Public input to this process has resulted in a suggestion to site the dewatering facility at your Langley site as an alternative to one of our options to site these facilities on the grounds of the Dalecarlia Water Treatment Plant on MacArthur Boulevard. The rationale for this suggestion is that a relocation of this part of the treatment would reduce construction adjacent to the residential neighborhoods here and would eliminate from District of Columbia and Montgomery County, Maryland streets the seven to eight commercial dump trucks per day that would be required on average to service the dewatering facilities.

If you were to grant permission for siting our facility at Langley, it would involve not only the initial construction, but daily staffing to operate and maintain as well as the aforementioned truck traffic in and out.

This would be a permanent installation.

For your reference we have also included a cd containing the project documents created to date.

I have spoken with Mr. Dave Muldvey in Facilities Support Operations and given him additional background on this request.

As we are on a schedule to publish the Draft EIS in April, we would appreciate a response by March 25, 2005.

- 2 -

I may be reached at 202-764-0031. Our project engineer is Mr. Michael Peterson. He may be reached at 202-764-0025.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Tom Jacobus', with a long horizontal flourish extending to the right.

Thomas P. Jacobus
General Manager

Enclosure

Washington Aqueduct Residuals Processing Alternatives

The Washington Aqueduct operates the Dalecarlia and McMillan water treatment plants in Washington, D.C., serving over one million persons in the District of Columbia and Northern Virginia area with potable water. The treatment process adds coagulant to remove solid particles (river silt) from the water withdrawn from the Potomac River, filters and disinfects the water, and distributes the finished water to the metropolitan service area. The solids generated during the treatment process have historically been returned to the Potomac River, but a recently reissued version of Washington Aqueduct's National Pollutant Discharge Elimination System permit (Permit No. DC 0000019) effectively precludes the return of the of water treatment solids to the river.

Consequently, Washington Aqueduct is in the process of evaluating water treatment residuals management options to minimize or eliminate the discharge of residuals to the Potomac River. The residuals management option that will ultimately be selected has the potential to affect the human environment, and thus development of the residuals management plan must comply with the National Environmental Policy Act and also Section 106 of the National Historic Preservation Act.

The Draft Environmental Impact Statement will consider a 20-year period of operations. Consequently, residuals quantities and sizing of facilities will be based on anticipated water production over the 20-year period. Similarly, the evaluation of impacts of the alternatives will be based on the 20-year period of examination.

Alternative A: Process Water Treatment Residuals at Dalecarlia Water Treatment Plant and Dispose in a Newly Constructed Dalecarlia Monofill. Process Dalecarlia Reservoir Forebay Residuals by Current Methods and Periodically Haul

Residuals from the Dalecarlia sedimentation basins and the Georgetown sedimentation basins would be collected and thickened/dewatered at the Dalecarlia water treatment plant before being disposed of in a newly constructed Dalecarlia monofill. Residuals from the Dalecarlia Reservoir forebay would be processed separately as is currently practiced and periodically hauled offsite or could also be disposed of in the Dalecarlia monofill.

Facilities. Sedimentation basins at Dalecarlia and Georgetown would be upgraded. A residuals thickening and dewatering facility has been preliminarily located west of the Capital Crescent Trail as it passes through the Dalecarlia water treatment plant. The mechanical processing area of this facility could rise approximately 70 feet. The approximate location of the monofill is between the Dalecarlia Reservoir and the Dalecarlia Parkway. As currently conceived, the monofill would rise approximately 50 feet from ground level on the Dalecarlia Parkway side and 80 feet on the Dalecarlia Reservoir side. For comparison, the existing trees in that area are in the range of 100 feet tall. The monofill would occupy about 30 acres.

Conveyance and Transport. Pipelines would convey coagulated residuals from both the Dalecarlia sedimentation basins and the Georgetown sedimentation basins to the Dalecarlia thickening facility. After thickening and dewatering, the solids would be moved by truck across MacArthur Boulevard to the monofill. On average, six onsite truck trips per day (six days per week) would be required.

Alternative B: Process Water Treatment Residuals at the Dalecarlia Water Treatment Plant and Dispose via Contract Hauling. Process Dalecarlia Reservoir Forebay Residuals by Current Methods and Periodically Haul

This alternative consists of thickening and dewatering water treatment residuals at the Dalecarlia water treatment plant. Residuals from the Dalecarlia sedimentation basins and the Georgetown sedimentation basins would be collected and thickened/dewatered at the Dalecarlia water treatment plant. The disposal method would be contract hauling from Dalecarlia water treatment plant to a permitted disposal facility.

MORE ON REVERSE

Residuals from the Dalecarlia Reservoir forebay would be processed separately as is currently practiced and periodically hauled offsite or could also be disposed of onsite.

Facilities. The facilities to complete this option are similar to alternative A, but without the creation of the monofill on the Dalecarlia Reservoir grounds.

Conveyance and Transport. Pipelines would convey water treatment residuals from both the Dalecarlia sedimentation basins and the Georgetown sedimentation basins to the Dalecarlia thickening facility. After thickening and dewatering, the residuals would be hauled by truck to a permitted offsite disposal facility. The estimated average number of trucks for handling the residuals is approximately ten per day (during the five-day workweek) at the 20-year predicted residuals production level.

Alternative C: Thicken Water Treatment Residuals at Dalecarlia Water Treatment Plant, then Pump via a New Pipeline to Blue Plains. Process Dalecarlia Reservoir Forebay Residuals by Current Methods and Periodically Haul

This alternative would eliminate truck traffic associated with residuals on the roads surrounding the Washington Aqueduct Dalecarlia and Georgetown operations by conveying coagulated residuals to the Blue Plains advanced wastewater treatment plant for further processing and disposal. Residuals from the Dalecarlia Reservoir forebay would be processed separately as is currently practiced.

Facilities. This alternative would involve similar sedimentation basin modifications and new thickening facilities. Dewatering facilities would be located at Blue Plains.

Conveyance and Transport. Pipelines would convey coagulated residuals from both the onsite sedimentation basins and the Georgetown sedimentation basins to the Dalecarlia thickening facility. Another dedicated pair of pipelines within the right-of-way of the Potomac Interceptor sewer would convey the thickened residuals to Blue Plains for final processing. These buried pipes would be approximately 10 miles in length and 12 inches in diameter.

Alternative D: No-Action Alternative

This alternative would result in non-compliance with Permit No. DC 0000019 and the Clean Water Act.

Alternative E: Process Water Treatment Residuals at the Dalecarlia Water Treatment Plant and Dispose via Contract Hauling. Process Dalecarlia Reservoir Forebay Residuals by Current Methods and Periodically Haul

This alternative consists of thickening and dewatering water treatment residuals at the Dalecarlia water treatment plant. Residuals from the Dalecarlia sedimentation basins and the Georgetown sedimentation basins would be collected and thickened/dewatered at the Dalecarlia water treatment plant. The disposal method would be contract hauling from Dalecarlia water treatment plant to a permitted disposal facility. Residuals from the Dalecarlia Reservoir forebay would be processed separately as is currently practiced and periodically hauled offsite or could also be disposed of onsite.

Facilities. The facilities to complete this option are similar to alternative A and B, but located adjacent to Little Falls Road on existing Washington Aqueduct property and also without the creation of a monofill (Alternative A) on the Dalecarlia Reservoir grounds.

Conveyance and Transport. Pipelines would convey water treatment residuals from both the Dalecarlia sedimentation basins and the Georgetown sedimentation basins to the Dalecarlia thickening facility. After thickening and dewatering, the residuals would be hauled by truck to a permitted offsite disposal facility. The estimated average number of trucks for handling the residuals is approximately ten per day (during the five-day workweek) at the 20-year predicted residuals production level.



DEPARTMENT OF THE ARMY
WASHINGTON AQUEDUCT
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
5900 MACARTHUR BOULEVARD, N.W.
WASHINGTON, D.C. 20016-2514

March 3, 2005

Office of the General Manager

Mr. Charles M. Murray, Executive Officer
Fairfax Water
8570 Executive Park Ave.
Fairfax, Virginia 22031-2218

Dear Mr. Murray:

As you know we are preparing an Environmental Impact Statement to address the consequences of options developed in our feasibility study to collect and dispose of water treatment solids.

I have previously discussed with you one of the options that would involve piping solids generated by Washington Aqueduct to a Fairfax Water treatment plant where they would be mixed with your solids and disposed of.

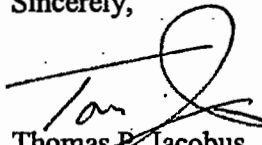
I am attaching a record of the e-mail correspondence.

In finalizing the work on the Draft EIS, we believe it would be better if we had a letter on your corporate letterhead restating Fairfax Water's position.

We would appreciate receiving this by March 25 so that we can appropriately compile the administrative record.

Thank you.

Sincerely,


Thomas P. Jacobus
General Manager

Enclosure

Jacobus, Thomas P WAD

From: Charlie Crowder [ccrowder@fairfaxwater.org]
Sent: Friday, December 03, 2004 10:25 AM
To: Jacobus, Thomas P WAD
Cc: Charles Murray; Dave Binning
Subject: RE: Washington Aqueduct Residuals Processing Project

Tom,

Fairfax Water does not have available operational capacity to receive additional solids from others at this time and we do not expect that we will ever be in a position to receive additional residual solids from the Washington Aqueduct or others in the future. I appreciate the challenge that solids handling places on the staff and customers of the Washington Aqueduct and, if you think it would be helpful, offer to share our history and experience with solids handling as you finalize plans.

Good luck with your project,
 Charlie

Charlie Crowder
 703/289-6011 office
 703/203-9013 cell
 571/722-6893 BlackBerry
 703/698-1759 fax
www.fairfaxwater.org

-----Original Message-----

From: Jacobus, Thomas P WAD [mailto:Thomas.P.Jacobus@wad01.usace.army.mil]
Sent: Wednesday, December 01, 2004 4:16 PM
To: Charlie Crowder; Tom Heikkinen
Cc: chuckmurray
Subject: Washington Aqueduct Residuals Processing Project

Charlie and Tom,

We're nearing the end of the analytical work in preparing our Draft Environmental Impact Statement for our solids project. We're looking at three alternatives: Collect and thicken and send to Blue Plains for further treatment and disposal from there; collect, thicken and dewater on site at the Dalecarlia Water Treatment Plant and then either store in a monofill on the grounds of the Dalecarlia Reservoir (that would be constructed) or truck from Dalecarlia to an off-site disposal location.

Charlie will recall this, but since I dealt with Chuck Murray at the time, you won't, Tom.

In January 2003, I paid a visit to each of your offices. At that time we were very close to the end of the permit process with EPA Region 3 and it was clear that there would be a permit that required the collection and disposal of the solids in some way that didn't involve the Potomac River. We were briefing EPA on the range of options we believed could be used to alternatively handle the solids.

3/3/2005

Because we knew that trucking in the local neighborhoods was not favored by many and that the solids composition may be inconsistent with the process used at Blue Plains, we wanted to be very open to other ideas.

Since each of you had or were soon to have solids processing facilities on site at Corbalis and Potomac respectively, I inquired about your corporate interest in receiving solids from Washington Aqueduct to be processed for a fee (plus whatever other capital improvements might be necessary at your plants).

Tom, after my meeting with Chuck at WSSC, I left with the response (verbal) that he did not believe it was in WSSC's current or future interest to process water treatment solids for others.

Charlie after listening to my presentation you asked for some time to reflect. You then subsequently communicated to me that at that stage of the development of the options you thought it best if Fairfax Water was not considered as a receiver and processor of the solids.

What I am requesting now is to ascertain if there has been any change in your evaluation of the situation with respect to your interest in receiving solids from Washington Aqueduct for processing at your plants.

Thank you for your consideration.

Tom J
202-764-0031

3/3/2005



DEPARTMENT OF THE ARMY
WASHINGTON AQUEDUCT
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
5900 MACARTHUR BOULEVARD, N.W.
WASHINGTON, D.C. 20016-2514

March 22, 2005

Office of the General Manager

Ms. Paula Ewen, Director
Office of Information and Management Services
Federal Highway Administration
400 7th Street, SW
HAIM-1, Room 4423
Washington, DC 20590

Sent Via Facsimile (202) 366-3473 (original to follow via U.S. mail)

Dear Ms. Ewen:

The purpose of this request is to determine if it would be to the benefit of your agency to lease/license approximately six acres of land at your McLean, Virginia facility site to the US Army Corps of Engineers for the purpose of constructing and operating a facility to dewater and truck away solids produced as a consequence of the operation of the Dalecarlia and McMillan water treatment plants in the District of Columbia.

The Washington Aqueduct is in the process of complying with a Federal Facilities Compliance Agreement accompanying a National Pollutant Discharge Elimination System Permit that will require that the sediment removed during the production of drinking water no longer be returned to the Potomac River. We have evaluated many different ideas for obtaining compliance and are nearing the end of the preparation of a Draft Environmental Impact Statement. Public input to this process has resulted in a suggestion to site the dewatering facility at your McLean facility as an alternative to one of our options to site these facilities on the grounds of the Dalecarlia Water Treatment Plant on MacArthur Boulevard. The rationale for this suggestion is that a relocation of this part of the treatment would reduce construction adjacent to the residential neighborhoods here and would eliminate from District of Columbia and Montgomery County, Maryland streets the seven to eight commercial dump trucks per day that would be required on average to service the dewatering facilities.

If you were to grant permission for siting our facility at your McLean facility, it would involve not only the initial construction, but daily staffing to operate and maintain as well as the aforementioned truck traffic in and out.

This would be a permanent installation.

For your reference we have also included a cd containing the project documents created to date.

I may be reached at 202-764-0031. Our project engineer is Mr. Michael Peterson. He may be reached at 202-764-0025.

Sincerely,

A handwritten signature in black ink, appearing to read "Tom Jacobus", with a long horizontal flourish extending to the right.

Thomas P. Jacobus
General Manager

Enclosure



DEPARTMENT OF THE ARMY
WASHINGTON AQUEDUCT
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
5900 MACARTHUR BOULEVARD, N.W.
WASHINGTON, D.C. 20016-2514

March 25, 2005

Office of the General Manager

Ms. Susan T. Straus, PE
Chief Engineer, Environment
City of Rockville, Public Works
111 Maryland Avenue
Rockville, MD 20850

Dear Ms. Straus:

The purpose of this request is to determine if the City of Rockville could possibly accept the water treatment residuals from the Washington Aqueduct, with compensation, for processing at your Rockville Water Treatment Plant permanently.

The Washington Aqueduct is in the process of complying with a Federal Facilities Compliance Agreement accompanying a National Pollutant Discharge Elimination System Permit that will require that the sediment removed during the production of drinking water no longer be returned to the Potomac River. We have evaluated many different ideas for obtaining compliance and are nearing the end of the preparation of a Draft Environmental Impact Statement. Public input to this process has resulted in a suggestion to locate a water treatment residuals processing operation at your facility as an alternative to siting the operation on the grounds of the Dalecarlia Water Treatment Plant and Reservoir on MacArthur Boulevard. The rationale for this suggestion is that a relocation of this part of the treatment would reduce construction adjacent to the residential neighborhoods here and would avoid the additional traffic on local Maryland and District of Columbia streets in the vicinity of the Dalecarlia site.

The two Washington Aqueduct water treatment plants produce approximately 180 MGD finished drinking water on average with a peak of approximately 250 MGD. The amount of dry solids expected to be generated on a daily basis has been estimated to be approximately 33 tons on average with wet year peaks on the order of five to six times the average. Mechanical dewatering for this material is expected to result in a 30 percent solid cake. For your reference we have also included a cd containing the project documents created to date.

I may be reached at 202-764-0031 Our project engineer is Mr. Michael Peterson. He may be reached at 202-764-0025.

Sincerely,

Thomas P. Jacobus
General Manager

Enclosure



DEPARTMENT OF THE ARMY
WASHINGTON AQUEDUCT
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
5900 MACARTHUR BOULEVARD, N.W.
WASHINGTON, D.C. 20016-2514

July 28, 2004

Office of the General Manager

Mr. John Trypus
DCWASA - DETS
5000 Overlook Avenue SW
Washington, DC 20032

Subject: Washington Aqueduct Residuals Management Plan and Environmental
Impact Statement - Information Needs

Dear Mr. Trypus:

The Washington Aqueduct is currently working on an Environmental Impact Statement (EIS) and residuals management plan for water treatment residuals to comply with our National Pollutant Discharge Elimination System (NPDES) Permit (Permit No. DC 0000019). The schedule for implementation of this project and for compliance with the discharge permit is dictated by requirements of the Federal Facilities Compliance Agreement (FFCA), which has been agreed to by both Washington Aqueduct and EPA Region III.

An Engineering Feasibility Study has recently been completed by our consultant, CH2M HILL, in support of the EIS. Three feasible options for the processing and disposal of water treatment residuals were identified. One option would involve the transport of thickened water treatment residuals to Blue Plains for dewatering and disposal via two, new forcemains that would parallel existing pipelines within the rights of way for the Potomac Interceptor and the other interceptors and forcemains on the route between the Washington Aqueduct and Blue Plains. The dewatered residuals would ultimately be hauled from Blue Plains for beneficial reuse via land application. The other two options under evaluation would involve thickening and dewatering at the Dalecarlia Water Treatment Plant, followed by either offsite land application or onsite disposal in a monofill.

Separate, parallel pipelines to Blue Plains were recommended to eliminate the potentially negative impact of water treatment residuals on wastewater processes at Blue Plains, and the potential for a possible discharge of water treatment residuals to the Potomac River via a combined-sewer overflow (CSO) event.

In order to complete the EIS, a more detailed evaluation of each of the selected options must be completed. The potential viability of each option in specific areas such as land use, zoning, permitting, cost, and schedule and the potential impacts of each option on existing biological, cultural, surface water, wetland, visual, and transportation resources will be included in the evaluation.

Additional information on the potential pipeline route to Blue Plains is needed by CH2M HILL to complete the evaluation of the Blue Plains option. While the level of detail only needs to be at the "planning and evaluation" level, the information must also be accurate, sound, and defensible. To that end, please provide assistance to CH2M HILL in their efforts to obtain information from the resources of DC WASA on the potential pipeline route. Glenn Palen is the Project Manager for the residuals project, and Ed Fleischer has already contacted you regarding this matter. Both can be reached at (703) 471-1441. The point of contact at the Washington Aqueduct is Patty Gamby. She can be reached at (202) 764-2639.

The attached table summarizes information needs that have been identified related to the engineering evaluation of the pipeline route for the Blue Plains option. Any other information that you may have with regard to the potential environmental impacts of the option would also be appreciated.

In addition, it would be helpful for CH2M HILL to meet with you (or your staff) to discuss the proposed option in more detail. Thank you for your efforts.

Sincerely,

Thomas P. Jacobus
General Manager

John -
Thank you for your help with the alternatives. A far simpler injection of the potamocline system to date are that Blue Plains could not accept our head of your solid not efficiency of your treatment is in error. But perhaps that could be a feasible way to use the existing sewer line who have to Right of way. It's appropriate your evaluation of both new lines to the denotation of the existing sewer.

TABLE 1 Washington Aqueduct Residuals Management Plan - Environmental Impact Statement Information Needs for Evaluation of the Blue Plains Residuals Processing Alternative		
Information Needs	Purpose	Information Source
Pipeline Route		
Location of the existing pipeline route from the Washington Aqueduct to Blue Plains.	Processing of water treatment residuals at Blue Plains was identified as a potentially viable option as part of the Engineering Feasibility Study for the Environmental Impact Statement to develop a residuals management plan for the Washington Aqueduct.	Source: DC WASA. Existing maps, Record Drawings, and GIS layers could all be used to develop the information.
The pipeline route (dual force mains) would follow the existing sewer line route from Washington Aqueduct to Blue Plains.	The Blue Plain option would provide for separate transport of water treatment residuals to Blue Plains and separate processing at Blue Plains to eliminate the impact of water treatment residuals on treatment processes at Blue Plains.	Level of detail required: Planning Level
The assumed route would follow existing right of ways (ROWs) for the Potomac Interceptor to the Upper Potomac Relief Sewer to the Potomac Pump Station to Blue Plains via existing force main routes.		
Location and Width of Existing ROW	ROW information is needed to access viability of the existing route.	Source: DC WASA. Existing maps, Record Drawings, and GIS layers could all be used to develop the information.
Pipe Sizes and Locations within ROW	May be helpful for identifying potential construction means and methods.	Level of detail required: Planning Level
Manhole Locations and Inverts (Depths)	May be helpful for identifying potential construction means and methods.	



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WASHINGTON AQUEDUCT
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
5900 MACARTHUR BOULEVARD, N.W.
WASHINGTON, D.C. 20016-2514

December 10, 2004

Office of the General Manager

Commander Al Demedeiros
North Area Operations
Nebraska Avenue Complex
4290 Mt Vernon Drive, N.W., Suite 18-145
Washington, D.C. 20393

Dear Commander Demedeiros:

Washington Aqueduct is the US Army Corps of Engineers organization that is responsible for providing drinking water to the District of Columbia as well as Arlington County Virginia and the City of Falls Church service area in Virginia. All water processed in Washington Aqueduct's two treatment plants comes from the Potomac River. During the drinking water treatment process, the sediment from the Potomac River water is removed. The Environmental Protection Agency issued a National Pollutant Discharge Elimination System (NPDES) permit that in essence requires Washington Aqueduct to cease returning the sediments, along with the coagulant used in the process, to the Potomac River. We refer to that material as "solids" or "residuals."

To comply with our NPDES permit we are performing an analysis of the available collection and disposal options and methods under the provisions of the National Environmental Policy Act (NEPA).

One alternative that is being evaluated involves thickening and dewatering residuals at the Dalecarlia water treatment plant site in Northwest Washington and trucking the dewatered solids -- on average nine truckloads per day -- from that site for disposal. This alternative is promising, but there are concerns regarding trucking through the adjacent neighborhoods and concerns about the siting of the dewatering building.

During the public comment period we were asked to evaluate the feasibility of siting the dewatering building at another location closer to major traffic routes. One site specifically suggested was the Carderock installation. This site was suggested because of its proximity to the beltway and because it is Federally owned land.

If you agreed to allow Washington Aqueduct to utilize some of the land at Carderock, and if we adopted this alternative, the residuals from our sedimentation basins would be

collected at Dalecarlia. They would be piped to Carderock within or adjacent to the existing raw water conduits aligned with MacArthur Boulevard. At Carderock there would be a structure approximately 148' by 76' by 71' high that housed equipment to dewater the material and hoppers to collect it and drop it into trucks for offsite disposal. The dewatering operations in that building would be staffed by Washington Aqueduct personnel and would operate continuously. The trucking of the solids from this building would be either five or six days per week and would require the same on average nine commercial dump trucks per day as it would if the facility were built on the Dalecarlia site.

We cannot proceed with our analysis until we know if you are willing to consider the location of this activity on your property. This activity would be of an indefinite term, and the appropriate real estate transaction would be effected between our services. In the interest of identifying the range of potential solutions for managing the water treatment residuals and in order to fully execute our responsibilities under NEPA, we request that you evaluate this potential alternative.

There are advantages and disadvantages to this alternative compared to alternatives presently being evaluated. We recognize that there would be challenges associated with the Carderock site if it were to be used as a location for the dewatering operation. To mention a few, there could potentially be concerns from both the neighborhoods and the National Park Service with visual, noise and other impacts related to the operation itself and there would be transportation concerns since the current haul route for the site is through an adjacent neighborhood. If this option were to be considered all of these issues would need to be addressed.

Based on this proposal, we request that your office comment on whether this facility could be located at the Carderock installation. As this proposal has surfaced late in our analytical process and because we are under a compliance order from US EPA Region III and must submit a report to them by December 20, 2004, we would appreciate by December 17, 2004 an indication of your ability to favorably consider this request.

Thank you for your consideration of this matter. I may be reached at 202-764-0031 or by email at Thomas.p.jacobus@usace.army.mil.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Thomas P. Jacobus', with a stylized flourish at the end.

Thomas P. Jacobus
General Manager



DEPARTMENT OF THE ARMY
WASHINGTON AQUEDUCT
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
5900 MACARTHUR BOULEVARD, N.W.
WASHINGTON, D.C. 20016-2514

December 13, 2004

Office of the General Manager

Lieutenant Amanda Brooks
NDW Det North APWO
BLDG 14
National Naval Medical Center
8901 Wisconsin Avenue
Bethesda, MD 20889

Dear Lieutenant Brooks:

Washington Aqueduct is the US Army Corps of Engineers organization that is responsible for providing drinking water to the District of Columbia as well as Arlington County Virginia and the City of Falls Church service area in Virginia. All water processed in Washington Aqueduct's two treatment plants comes from the Potomac River. During the drinking water treatment process, the sediment from the Potomac River water is removed. The Environmental Protection Agency issued a National Pollutant Discharge Elimination System (NPDES) permit that in essence requires Washington Aqueduct to cease returning the sediments, along with the coagulant used in the process, to the Potomac River. We refer to that material as "solids" or "residuals."

To comply with our NPDES permit we are performing an analysis of the available collection and disposal options and methods under the provisions of the National Environmental Policy Act (NEPA).

One alternative that is being evaluated involves thickening and dewatering residuals at the Dalecarlia water treatment plant site in Northwest Washington and trucking the dewatered solids -- on average nine truckloads per day -- from that site for disposal. This alternative is promising, but there are concerns regarding trucking through the adjacent neighborhoods and concerns about the siting of the dewatering building.

During the public comment period we were asked to evaluate the feasibility of siting the dewatering building at another location closer to major traffic routes. One site specifically suggested was the Carderock installation. This site was suggested because of its proximity to the beltway and because it is Federally owned land.

If you agreed to allow Washington Aqueduct to utilize some of the land at Carderock, and if we adopted this alternative, the residuals from our sedimentation basins would be

collected at Dalecarlia. They would be piped to Carderock within or adjacent to the existing raw water conduits aligned with MacArthur Boulevard. At Carderock there would be a structure approximately 148' by 76' by 71' high that housed equipment to dewater the material and hoppers to collect it and drop it into trucks for offsite disposal. The dewatering operations in that building would be staffed by Washington Aqueduct personnel and would operate continuously. The trucking of the solids from this building would be either five or six days per week and would require the same on average nine commercial dump trucks per day as it would if the facility were built on the Dalecarlia site.

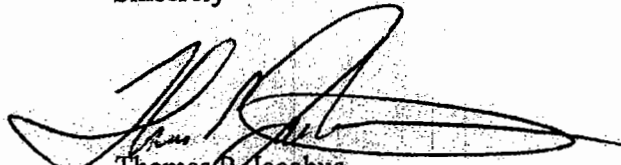
We cannot proceed with our analysis until we know if you are willing to consider the location of this activity on your property. This activity would be of an indefinite term, and the appropriate real estate transaction would be effected between our services. In the interest of identifying the range of potential solutions for managing the water treatment residuals and in order to fully execute our responsibilities under NEPA, we request that you evaluate this potential alternative.

There are advantages and disadvantages to this alternative compared to alternatives presently being evaluated. We recognize that there would be challenges associated with the Carderock site if it were to be used as a location for the dewatering operation. To mention a few, there could potentially be concerns from both the neighborhoods and the National Park Service with visual, noise and other impacts related to the operation itself and there would be transportation concerns since the current haul route for the site is through an adjacent neighborhood. If this option were to be considered all of these issues would need to be addressed.

Based on this proposal, we request that your office comment on whether this facility could be located at the Carderock installation. As this proposal has surfaced late in our analytical process and because we are under a compliance order from US EPA Region III and must submit a report to them by December 20, 2004, we would appreciate by December 17, 2004 an indication of your ability to favorably consider this request.

Thank you for your consideration of this matter. I may be reached at 202-764-0031 or by email at thomas.p.jacobus@usace.army.mil.

Sincerely



Thomas P. Jacobus
General Manager

Consultation Letters to Agencies Concerning DEIS



DEPARTMENT OF THE ARMY
WASHINGTON AQUEDUCT
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
5900 MACARTHUR BOULEVARD, N.W.
WASHINGTON, D.C. 20016-2514

August 29, 2005

Office of the General Manager

Honorable Nancy Floreen
At-Large Councilmember
Chair, Transportation and Environment Committee
Montgomery County Council
100 Maryland Avenue
Rockville, MD 20850

Dear Ms. Floreen:

This responds to your June 23 letter to Washington Aqueduct expressing your concerns about the alternative recommended as the proposed action in the Draft Environmental Impact Statement (DEIS) for the Washington Aqueduct Residuals Project. You expressed concern that Washington Aqueduct did not consider the full environmental, safety, health and economic impacts of trucking the residuals from its Dalecarlia site through Montgomery County. You also requested an update on Washington Aqueduct's plans to consider other alternatives that would place less of a burden on the residents of Montgomery County.

Section 4 of the DEIS presents an extensive discussion of the environmental, health, safety and economic impacts of the alternatives. Likewise, Section 4 of the final EIS will reflect ongoing consideration and analysis and will be augmented with additional information regarding the alternatives. An example of an augmented discussion involves air quality considerations. Based on comments received, the final EIS will have a more detailed analysis of fine particulate matter (PM_{2.5}). The fine particulate matter generated by diesel trucks hauling residuals will be compared to the de minimis threshold levels of the region's State Implementation Plans.

Some in the community have incorrectly taken the extreme condition for trucking residuals and presented that as a daily expectation. That is simply not correct. To inform the public of the entire range of conditions, the DEIS presented the extreme residuals production situation as a weeklong period that might occur once in an eleven year weather cycle. In the final EIS, there will be additional information on how a dewatering facility could be designed to reduce the number of loads during such a peak condition. Washington Aqueduct expects to use the larger capacity 20-ton trucks, not 10 ton trucks. The expected routine number of loads will be eight a day, five days a week.

The DEIS presented and evaluated eight routes. These routes were selected because they are high volume roads whose designations are consistent with the truck traffic that would be necessary to carry the dewatered residuals. One segment of one of the routes (i.e., the route that

would have used Little Falls Parkway) was erroneously included since that parkway designation does not allow truck traffic. That route will not appear in the final EIS.

The likely disposal site for trucked dewatered solids is a land application outside the Capital Beltway, but no specific site is under contract. Therefore, many routes through the District of Columbia, into Virginia and into Maryland were analyzed.

With respect to your concern that the DEIS fails to consider the full costs of operating trucks over the life of this project, the economics of trucking were based on current information and considered in the feasibility analysis and the evaluation of alternatives. Economics do not rule out trucking compared to other possible alternatives. In fact, no alternative was screened out due solely to cost.

Another concern you raised was the impact of trucking upon Montgomery County's air quality and the health and safety of its citizens. Any trucking of residuals will always comply with applicable air quality regulations. Any trucking of residuals will also be operated in a safe and courteous manner by drivers in trucks that meet all applicable mechanical standards for safety.

You also asked for an update on alternatives that would have less of an effect on residents of Montgomery County. We interpret this to refer to piping alternatives. Throughout the environmental analysis, piping was a prime candidate as a technical solution to the problem of transporting water treatment residuals to a secondary location for processing and subsequent transport to a final destination.

What must be considered is what happens at the end of the pipe. A dewatering facility would have to be built or enlarged at that site and trucking of the solids would necessarily operate from there. To do the environmental analysis at a remote site necessarily requires that such a site be available to or under the control of Washington Aqueduct.

Washington Aqueduct has consulted with the District of Columbia Water and Sewer Authority (WASA) to determine how it might be possible to integrate the water treatment residuals with the biosolids at Blue Plains – and how to get them there via existing or new pipelines. From an engineering and operational perspective both DC WASA and the Blue Plains Regional Committee under the auspices of the Metropolitan Washington Council of Governments determined that this material was inconsistent with the future operations at Blue Plains and would not be in the best interests of the customers of Blue Plains.

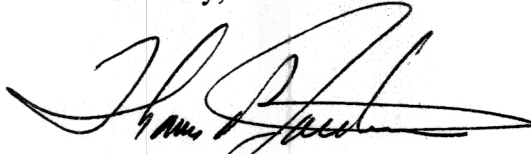
The other water treatment plants that currently dewater solids (e.g., Fairfax Water, Washington Suburban Sanitary Commission, and City of Rockville) have all declined to take on an additional capacity. Attempts to gain access at other federal agencies have not been successful.

The practical situation is that Washington Aqueduct has an administrative order (a Federal Facilities Compliance Agreement) to comply with the Clean Water Act. Any recommended action must take into account the ability to complete it within the required time to comply with the Federal Facilities Compliance Agreement and the National Pollutant Discharge Elimination System permit.

We are currently in the process of considering comments from the public and agencies concerned. The Washington Aqueduct is committed to complying with the National Environmental Policy Act and supporting regulations promulgated by the Council on Environmental Quality and the United States Army Corps of Engineers. The NEPA process ensures that members of the public, elected officials, and regulatory agencies can voice concerns, ideas and opinions about projects and proposed alternatives and that their input is considered. As you can see from Section 4 of the DEIS, alternatives are being evaluated in light of the potential for environmental, social and economic consequences on the affected neighborhoods.

Thank you for your interest in this project.

Sincerely,

A handwritten signature in black ink, appearing to read 'Tom Jacobus', with a long horizontal flourish extending to the right.

Thomas P. Jacobus
General Manager



**DEPARTMENT OF THE ARMY
WASHINGTON AQUEDUCT
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
5900 MACARTHUR BOULEVARD, N.W.
WASHINGTON, D.C. 20016-2514**

August 29, 2005

Office of the General Manager

Honorable Howard A. Denis
District 1 Councilmember
Montgomery County Council
100 Maryland Avenue
Rockville, MD 20850

Dear Mr. Denis:

This responds to your June 23 letter to Washington Aqueduct expressing your concerns about the alternative recommended as the proposed action in the Draft Environmental Impact Statement (DEIS) for the Washington Aqueduct Residuals Project. You expressed concern that Washington Aqueduct did not consider the full environmental, safety, health and economic impacts of trucking the residuals from its Dalecarlia site through Montgomery County. You also requested an update on Washington Aqueduct's plans to consider other alternatives that would place less of a burden on the residents of Montgomery County.

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would have used Little Falls Parkway) was erroneously included since that parkway designation does not allow truck traffic. That route will not appear in the final EIS.

The likely disposal site for trucked dewatered solids is a land application outside the Capital Beltway, but no specific site is under contract. Therefore, many routes through the District of Columbia, into Virginia and into Maryland were analyzed.

With respect to your concern that the DEIS fails to consider the full costs of operating trucks over the life of this project, the economics of trucking were based on current information and considered in the feasibility analysis and the evaluation of alternatives. Economics do not rule out trucking compared to other possible alternatives. In fact, no alternative was screened out due solely to cost.

Another concern you raised was the impact of trucking upon Montgomery County's air quality and the health and safety of its citizens. Any trucking of residuals will always comply with applicable air quality regulations. Any trucking of residuals will also be operated in a safe and courteous manner by drivers in trucks that meet all applicable mechanical standards for safety.

You also asked for an update on alternatives that would have less of an effect on residents of Montgomery County. We interpret this to refer to piping alternatives. Throughout the environmental analysis, piping was a prime candidate as a technical solution to the problem of transporting water treatment residuals to a secondary location for processing and subsequent transport to a final destination.

What must be considered is what happens at the end of the pipe. A dewatering facility would have to be built or enlarged at that site and trucking of the solids would necessarily operate from there. To do the environmental analysis at a remote site necessarily requires that such a site be available to or under the control of Washington Aqueduct.

Washington Aqueduct has consulted with the District of Columbia Water and Sewer Authority (WASA) to determine how it might be possible to integrate the water treatment residuals with the biosolids at Blue Plains – and how to get them there via existing or new pipelines. From an engineering and operational perspective both DC WASA and the Blue Plains Regional Committee under the auspices of the Metropolitan Washington Council of Governments determined that this material was inconsistent with the future operations at Blue Plains and would not be in the best interests of the customers of Blue Plains.

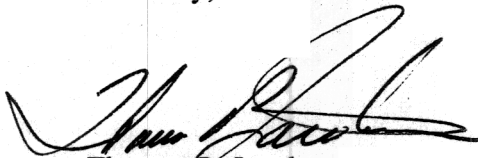
The other water treatment plants that currently dewater solids (e.g., Fairfax Water, Washington Suburban Sanitary Commission, and City of Rockville) have all declined to take on an additional capacity. Attempts to gain access at other federal agencies have not been successful.

The practical situation is that Washington Aqueduct has an administrative order (a Federal Facilities Compliance Agreement) to comply with the Clean Water Act. Any recommended action must take into account the ability to complete it within the required time to comply with the Federal Facilities Compliance Agreement and the National Pollutant Discharge Elimination System permit.

We are currently in the process of considering comments from the public and agencies concerned. The Washington Aqueduct is committed to complying with the National Environmental Policy Act and supporting regulations promulgated by the Council on Environmental Quality and the United States Army Corps of Engineers. The NEPA process ensures that members of the public, elected officials, and regulatory agencies can voice concerns, ideas and opinions about projects and proposed alternatives and that their input is considered. As you can see from Section 4 of the DEIS, alternatives are being evaluated in light of the potential for environmental, social and economic consequences on the affected neighborhoods.

Thank you for your interest in this project.

Sincerely,

A handwritten signature in black ink, appearing to read 'Tom Jacobus', with a stylized flourish at the end.

Thomas P. Jacobus
General Manager



DEPARTMENT OF THE ARMY
WASHINGTON AQUEDUCT
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
5900 MACARTHUR BOULEVARD, N.W.
WASHINGTON, D.C. 20016-2514

August 29, 2005

Office of the General Manager

Mr. William J. Hoffman, Chief
Environmental Programs Branch
US EPA Region 3
1650 Arch Street, Mail Code: (3EA30)
Philadelphia, PA 19103-2029

Dear Mr. Hoffman:

Thank you for presenting EPA Region 3's comments on Washington Aqueduct's Draft Environmental Impact Statement for the Residuals Project (CEQ #20050154).

Washington Aqueduct has reviewed these comments and plans to include additional information in the Final Environmental Impact Statement (FEIS) to address some inconsistencies and to clarify transportation impacts.

Based on the fact that the "no action" alternative is not consistent with the purpose and need of the project, and thus, would not result in compliance with the April 2003 NPDES permit, and in response to the comments received, the "no action" alternative is not likely to be selected. Therefore, the residuals that have heretofore been returned to the Potomac River, would upon completion of this proposed action no longer go to the river. Washington Aqueduct understands your views on the explanation of effects as presented in the DEIS.

Washington Aqueduct has from the outset of this project striven to have robust and inclusive public involvement in the development of an Environmental Impact Statement as the most detailed element of compliance with the National Environmental Policy Act. In the FEIS, Washington Aqueduct will enhance the description of the process in a timely manner specifically the relationship of the National Pollutant Discharge Elimination System permit and the Federal Facilities Compliance Agreement. Further, the compliance (i.e., non-voluntary) nature of this agreement will be stressed.

A discussion of alum recycling will be included.

If the decision is to construct a dewatering facility, there will be best management practices in place to minimize air quality issues as well as noise.

Thank you again for your input to this part of the NEPA process.

Sincerely,

Thomas P. Jacobus
General Manager

AGENCY RESPONSES ON ALTERNATIVES



WASHINGTON SUBURBAN SANITARY COMMISSION

14501 Sweitzer Lane

Laurel, Maryland 20707-5902

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GENERAL MANAGER
Andrew D. Brunhart

ACTING
DEPUTY GENERAL MANAGER
Carla Reid Joyner

March 8, 2005

Mr. Thomas P. Jacobus *THM 05*
General Manager
Department of the Army
Washington Aqueduct
5900 MacArthur Boulevard, N.W.
Washington, D.C. 20016-2514

Dear Mr. Jacobus:

I understand that one of the alternatives under consideration for the processing of Washington Aqueduct Water Treatment residuals is to utilize existing WSSC facilities through a cooperative arrangement. We considered this idea in the past and came to the conclusion that it was not in the best interest of the Commission to have such a large portion of the material being processed at our Potomac Solids Facility originating from a non-Commission source. This assessment still stands.

I wish you luck in selecting a feasible alternative for your project. Please feel free to contact me at (301) 206-7010 should you have any questions.

Sincerely,

Thomas O. Heikkinen, Chief
Plant Operations

Central Intelligence Agency



Washington, D.C. 20505

22 March 2005

Dear Mr. Jacobus:

The following is in response to your letter of March 3, 2005, received via fax by the Central Intelligence Agency (CIA) on that date, regarding the proposal to construct and operate a facility at CIA Headquarters at Langley, Virginia, to dewater and truck away solids produced as a consequence of water treatment plant operations in the District of Columbia.

Because CIA Headquarters is by definition a highly secure National Security Facility, it would not be possible to locate such an operation as you propose within or immediately adjacent to the perimeter of this site. You should also be aware that this Headquarters is located adjacent to U.S. Park Service property and several private residences, which historically have shown significant sensitivity to proposals that could result in threats to the environment, increases in traffic and noise, and other changes such as you describe in this proposal to establish an industrial facility in the area. Given these considerations CIA must decline the offer to host the water treatment plant.

Sincerely,

A handwritten signature in cursive script that reads "Camille Hersh".

Camille Hersh

Chief, Facilities Support

Fairfax Water

FAIRFAX COUNTY WATER AUTHORITY

8570 Executive Park Avenue
Fairfax, Virginia 22031-2218

HARRY F. DAY, CHAIRMAN
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CONNIE M. HOUSTON, TREASURER
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FRANK R. BEGOVICH

CHARLIE C. CROWDER, JR.
GENERAL MANAGER
TELEPHONE (703) 289-6011

CHARLES M. MURRAY
EXECUTIVE OFFICER
TELEPHONE (703) 289-6013

FAX: (703) 698-1759

March 10, 2005

Thomas P. Jacobus *y*
General Manager
Washington Aqueduct
U.S. Army Corps of Engineers
5900 MacArthur Boulevard, NW
Washington, D.C. 20016-2514

Re: Solids Project

Dear Mr. Jacobus:

This letter is in response to your request that Fairfax Water consider the feasibility of treating and disposing of the solids produced by the Washington Aqueduct facilities at Fairfax Water's facilities.

Fairfax Water does not have operational capacity to receive additional solids from others at this time. I appreciate the challenge that solids-handling places on the staff and customers of the Washington Aqueduct and, if you think it would be helpful, we would be pleased to share our history and experience with solids-handling as you finalize plans.

Good luck with your project.

Sincerely,



Charlie C. Crowder, Jr.
General Manager

CC: C. David Binning, Director, Planning & Engineering



City of Rockville
111 Maryland Avenue
Rockville, Maryland
20850-2364
www.rockvillemd.gov

Public Works
240-314-8600
TTY 240-314-8117
FAX 240-314-8539

Public Works Operations
240-314-8570
FAX 240-314-8589

Motor Vehicle Maintenance
240-314-8485
FAX 240-314-8499

Water Treatment Plant
240-314-8555
FAX 240-314-8564

April 5, 2005

Mr. Thomas P. Jacobus
General Manager
Washington Aqueduct
5900 MacArthur Boulevard, N.W.
Washington, DC 20016-2514

SUBJECT: Washington Aqueduct Water Treatment Residuals

Dear Mr. Jacobus:

This is in response to your letter dated March 25, 2005 with regard to the possibility of having the City of Rockville accept water treatment residuals from the aqueduct for processing at our treatment plant.

Please note that the City's Water Treatment Plant is a small plant with an average water production of about 6 mgd and a dry solid handling capacity of an average of 2½ to 3 tons per day. With the large quantity of dry solids from the Aqueduct (33 tons), we cannot possibly handle it without an additional plant.

The Water Treatment Plant compound is severely limited in space. It is not feasible to locate any substantial piece of land for expansion. Our treatment plant is located in a quiet residential neighborhood near the Potomac River. The access road to the plant is an unsurfaced one lane rural road that cannot handle any increase in truck traffic for the transportation of additional solid waste. It will certainly be an uphill battle for the City of Rockville to obtain agreement from the nearby community on any large addition to the plant.

In view of the above facts, I regret to inform you that we cannot meet your request. However, I shall be glad to offer any other assistance you may require.

Sincerely,

Susan T. Straus, P.E.
Acting Director of Public Works

STS/EYW/kz

Cc: Bill Sizemore, Water Treatment Plant Superintendent
Edwin Woo, Civil Engineer II-Environment
Day File

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MAYOR
Larry Giammo

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Anne M. Robbins

CITY MANAGER
Scott Ullery

CITY CLERK
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CITY ATTORNEY
Paul T. Glasgow



DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY

5000 OVERLOOK AVENUE, S.W., WASHINGTON, D.C. 20032

OFFICE OF THE GENERAL MANAGER

TEL: 202-787-2609

FAX: 202-787-2333

October 28, 2004

Mr. Thomas P. Jacobus *gill*
General Manager
Washington Aqueduct Division
U.S. Army Corps of Engineers, Baltimore District
5900 MacArthur Blvd, N.W.
Washington, DC 20016-2514

SUBJECT: Residuals Project – Draft EIS Alternatives

Dear Mr. Jacobus:

The District of Columbia Water and Sewer Authority (DCWASA) has received your letters, dated September 10th and 17th, 2004, welcoming our participation in the subject project as well as to advise us of the public meeting that was held on September 28, 2004. I appreciate your coordination with DCWASA, and would like to express our committed involvement to this project. As you know, DCWASA contributes approximately 75% of the cost for capital and operating expenses by the Washington Aqueduct Division (WAD), and as such we have a vested interest in serving our ratepayers with potable water at the highest quality and lowest possible cost, while protecting the environment.

It is our understanding that the WAD has developed 26 alternatives that were screened as part of their Environmental Impact Statement (EIS) process. Of the 26 screened alternatives, it was indicated that three were determined to be feasible, not including the 'not action' alternative. While each of these three alternatives are of great interest to DCWASA, the alternative that proposes piping the thickened residuals to the Blue Plains Advanced Wastewater Treatment Plant (AWTP) for dewatering and offsite disposal poses the greatest concern. Based on our understanding of this alternative (Alternative C) we must conclude that it is, in fact not feasible.

Alternative C in the screened alternatives would require a dual 12-inch diameter forcemain to be constructed from the Dalecarlia Water Treatment Plant to the Blue Plains AWTP. Thickened residuals would be pumped to the Blue Plains AWTP where it is envisioned that a newly constructed dewatering facility would be used to dewater the thickened residuals for offsite disposal by trucking. While DCWASA understands that this option has yet to be fully evaluated, we would like to state our concerns with this alternative.

Current regulatory initiatives require that we conserve the limited Blue Plains AWTP site to construct additional facilities needed to meet near term changes expected in the Plants NPDES Permit. The regulatory initiatives include the following:

- 1) Chesapeake Bay Program (CBP) goals and TMDLs for the District, as well as our joint users in Maryland and Virginia and associated increased nutrient removal by the Blue Plains AWTP.

Mr. Thomas P. Jacobus
October 28, 2004
Page 2

- 2) Combined Sewer Overflow (CSO) Long Term Control Plan (LTCP), which will require Storage of CSO in newly constructed tunnels and the subsequent pump-out for treatment at Blue Plains AWTP.
- 3) Draft Blending Policy that will result in more stringent permit limits for the Plant's excess flow outfall.

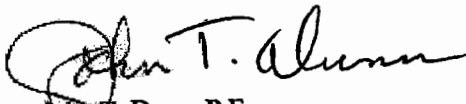
In addition, future growth in the Metropolitan Washington region may require the need for additional treatment capacity at the Blue Plains AWTP by the District of Columbia and our joint suburban users. As you are aware, the Blue Plains facility has limited space available as it is confined to the north by the Naval Research Laboratory, to the east by I-295, and to the west and south by the Potomac River.

Additionally, WASA's Biosolids Management Program (BMP) is based on utilization of our biosolids, which are organic in nature, in a land application program. The biosolids are land applied predominately in Virginia and at this point the State of Virginia is proposing increased regulatory requirements on land application. This is merely the latest in a series of regulatory and legislative actions that could impact DCWASA's BMP. Large amounts of inorganic solids, such as the water treatment residuals proposed for piping to Blue Plains AWTP in Alternative C, would add considerable pressure to a valuable recycling program already facing constant regulatory and public pressures.

For the reasons stated above WASA concludes that Alternate C is not feasible due to both site constraints at the Blue Plains AWTP and incompatibility with WASA's Biosolids Management Plan.

Please feel free to contact me at 202-787-2610 should you wish to discuss any of the project issues. In addition, please have appropriate staff at the WAD coordinate project activities with Mr. John Trypus in our Department of Engineering and Technical Services. Mr. Trypus has been designated as DCWASA's primary contact for coordinating efforts related to our interests in the project, and he may be reached at 202-787-2406 or jtrypus@dcwasa.com.

Sincerely,



John T. Dunn, P.E.
Chief Engineer/Deputy General Manager

c: Jerry Johnson, General Manager, DCWASA
John Trypus, Project Manager, DCWASA



BLUE PLAINS REGIONAL COMMITTEE

c/o Metropolitan Washington Council of Governments

777 North Capitol Street, NE, Suite 300 • Washington, D.C. 20002-4239 • (202) 962-3200 • FAX (202) 962-3203

District of Columbia
Fairfax County
Montgomery County
Prince George's County
Washington Suburban
Sanitary Commission

March 3, 2005

Thomas P. Jacobus *Received 7 Mar 05*
General Manager
Washington Aqueduct
U.S. Army Corps of Engineers, Baltimore District
5900 Mac Arthur Boulevard, N.W.
Washington, DC 20016-2514

RE: Blue Plains User's Comments Regarding the Washington Aqueduct's Water Treatment Residuals Management Project - Alternative C

Dear Mr. Jacobus,

On behalf of the Blue Plains Regional Committee (BPRC) I would like to express our appreciation for the very informative presentation you gave on December 21, 2004 about the Washington Aqueduct's (WAD) Residuals project. You were very forthcoming in addressing our questions, and we appreciate your efforts to keep us informed about this project.

We are also submitting the following comments regarding the proposed options for managing the WAD water treatment residuals -- in particular the Blue Plains option (Alternative C) - which is currently presented in your Alternatives Analysis document (December 2004). We understand that the WAD has ruled out that alternative as a 'preferred' option and that you are actively evaluating other alternatives. **However, we wish to state for the record that Alternative C is in fact 'not feasible' for the reasons outlined below.** We respectfully submit these comments as the WAD begins to prepare its Draft Environmental Impact Statement (DEIS) for this project.

As you are aware, the BPRC represents the interests of the Blue Plains Users (i.e. the District of Columbia; Fairfax County, Virginia; Prince George's and Montgomery Counties, Maryland; and the Washington Suburban Sanitary Commission) as defined under the terms of the 1985 Blue Plains Intermunicipal Agreement. These interests include ensuring that the long-term wastewater needs of the Users can continue to be addressed at the Blue Plains wastewater treatment plant. The Blue Plains plant, which is managed by the District of Columbia's Water and Sewer Authority (DC-WASA), is therefore an important regional resource.

As part of its regional long-term planning efforts, the BPRC recently completed a study of our collective long-term wastewater capacity needs through the year 2030. We are also actively participating in DC-WASA's current study - which is evaluating Blue Plains' process requirements in light of those capacity needs and pending regulations. It is appropriate, therefore, that we comment on the WAD's Alternative C because of its potential to negatively impact the Blue Plains plant and its programs. Please note that our concerns reinforce many of the same concerns previously outlined in the letter submitted by Mr. John Dunn, DC-WASA (October 28, 2004).

Competition for Limited On-Site Acreage & Blue Plains' Own Process Needs

The Blue Plains plant, as a 370 million gallon per day (MGD) facility, is by far the largest wastewater plant in the metropolitan Washington region and the Chesapeake Bay watershed, and the largest plant of its type in the United States. The plant's location within the District of Columbia is bounded by the Potomac River, the Naval Research Laboratory, and Interstate 295. As such, any and all wastewater and biosolids processes needs for the plant (both current and future) are constrained by those physical limitations and the location of the existing facilities, as well of those facilities that are planned and/or currently under construction.

The Blue Plains plant is currently undergoing extensive, multi-year capital construction projects to upgrade and enhance its wastewater and sludge treatment processes; and, is set to embark on a major capital project to build new sludge digesters on-site. In addition, DC-WASA's current study will determine the feasibility and potential impacts of:

- a) Implementing its Combined Sewer System Long-term Control Plan (including identifying its on-site process needs);
- b) Achieving additional nitrogen reductions to address new nutrient-based water quality standards for the Potomac River and the Chesapeake Bay;
- c) Addressing increased treatment requirements for the plant's 'excess flows';
- d) Ensuring that the projected wastewater capacity needs of the Blue Plains Users can be maintained given the above demands; and
- e) Evaluating the potential to expand the plant's current capacity in order to address additional/future wastewater treatment needs of the Users.

Collectively all of these competing demands will continue to require very careful consideration as to the sizing and location of these new/expanded facilities. In addition to meeting the physical challenges of the site, these facilities must be constructed to ensure that the plant can continue to meet its National Pollution Discharge Elimination System (NPDES) permit conditions under all conditions. These efforts must also preserve acreage whenever possible in order to maximize the plant's ability to address future regulatory demands. These considerations are consistent with protecting the plant's primary mission – to provide cost-effective wastewater treatment for the region.

Given the many critical site constraints and permit demands facing Blue Plains; it would be inappropriate, therefore, to consider setting aside acreage at Blue Plains for the purpose of accommodating facilities to serve the WAD's residuals management needs.

Incompatibility with Blue Plains' Biosolids Management Program Objectives

As a direct result of providing wastewater treatment for the majority of the metropolitan Washington region, Blue Plains generates a tremendous amount of biosolids. The majority of these biosolids are, and will continue to be, land applied – which recycles the organic material in a responsible and environmentally sound manner. This practice will continue even after the new sludge digesters are put in service. DC-WASA's Biosolids Management Program (BMP) supports ongoing efforts to ensure that this valuable and cost-effective practice remains viable despite increased state regulatory requirements and public pressure. These efforts aim to promote Blue Plains' biosolids as a beneficial, organic soil amendment that can be land applied throughout the region in a cost-effective manner.

As previously noted, Blue Plains will shortly begin construction of new sludge digesters utilizing a state-of-the art digestion process. Two significant benefits of that process will be to produce fewer biosolids by volume and to produce a better end-product. These benefits, which are inherent in the BMP's goals, will allow greater diversity (i.e., end use options) for Blue Plains' biosolids. However, the WAD residuals are inherently inorganic and therefore lack the beneficial characteristics of Blue Plains' organic biosolids. They generally require different dewatering techniques and chemicals, and would also add a significant volume of material that would have to be dealt with both on and off-site. Adding these inorganic water treatment plant residuals to the digested organic biosolids product would increase volume, limit program diversity, and add competing demands on this important land application program – all of which are in conflict with the BMP's goals.

Given the importance of maintaining a successful and viable biosolids land application program for Blue Plains, and the need to minimize any actions that might be harmful to that program's goals, it would be incompatible with DC-WASA's Blue Plains' BMP to accommodate the dewatering and ultimately the off-site disposal of inorganic residuals from the WAD's facilities.

In closing, we recognize the need for the WAD and its consultant to explore options for addressing its water treatment residuals management. **However, we must state for the record that from both an engineering and a planning perspective, that the proposed Blue Plains option, Alternative C, should be deemed 'not feasible' for the reasons we have outlined above.**

If you have any questions about these comments please feel free to contact me at (703) 324-5033, or Tanya Spano, COG staff at (202) 962-3776.

Sincerely,



Jimmie Jenkins

Chairman

Blue Plains Regional Committee Chairman

cc: Jerry Johnson, General Manager, DC-WASA
Blue Plains Regional Committee
Blue Plains Technical Committee



DEPARTMENT OF THE NAVY
NAVAL DISTRICT WASHINGTON
1014 N STREET SE SUITE 200
WASHINGTON NAVY YARD DC 20374-5001

5775
Ser N01N/0086

FEB 16 2005

Thomas Jacobus
General Manager
Washington Aqueduct
U.S. Army Corps of Engineers, Baltimore District
5900 Macarthur Blvd, N.W.
Washington, D.C. 20016-2514

Dear Mr. Jacobus:

SUBJECT: REQUEST FOR DEWATERING FACILITY

I am writing in response to your letter of 13 December 2004, which requested consideration to locate a dewatering facility at Naval Surface Warfare Center, Carderock Division (NSWCCD). Unfortunately, construction of a public municipal facility within the fence line of NSWCCD is not consistent with the Navy's current and long-term plans for this installation.

The mission of NSWCCD requires considerable security and force protection measures that could potentially be compromised during the construction and during operation of such a facility. Additionally, the acreage required to construct and operate the proposed facility is well beyond the Navy's ability to accommodate your request.

In addition to the aforementioned, we anticipate the National Park Service and local residential neighborhoods may also have significant concerns with your proposal.

Accordingly, I regret to inform you that Naval District Washington (NDW) is unwilling to entertain your request for land on NSWCCD. Please let me know if I can provide any clarifying information on our position. I can be reached at (202) 764-0522 or by email at Al.Demedeiros@navy.mil.

Sincerely,

707

AL de MEDEIROS
Commander, U.S. Navy Reserve
NDW North Area Operations
Officer
By direction of the Commandant

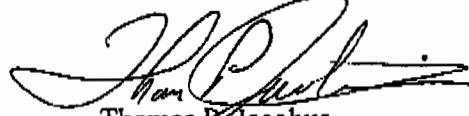
CENAB-WA

April 9, 2005

Memorandum for the Record

Subject: Coordination with National Park Service re Residuals Processing Draft EIS

1. On December 29, 2004, Washington Aqueduct wrote to the National Park Service, National Capital Region requesting their input on the concept of building an access road from the Dalecarlia Water Treatment Plant to Clara Barton Parkway and using the parkway to truck solids from a facility sited at Dalecarlia. That letter also requested input on siting a facility on the grounds of the Navy's facility at Carderock.
2. We have had further consultations with the NPS and have seen a draft of their response. While not finalized, we believe that it is the view of the NPS that access to and use of the Clara Barton Parkway is not consistent with their stewardship mission of the National Park system.
3. The Navy declined our request to use the Carderock facility so the NPS's involvement at that site is moot.
4. When the signed letter is received from the NPS it will be included in the final EIS.



Thomas P. Jacobus
General Manager

Agency Responses on DEIS



COUNCIL OF THE DISTRICT OF COLUMBIA
THE JOHN A. WILSON BUILDING
1350 PENNSYLVANIA AVENUE, N.W.
WASHINGTON, D.C. 20004

May 10, 2005

Attn: Office of the General Manager
C/O: Mr. Thomas P. Jacobus
General Manager
Department of the Army
Washington Aqueduct
U.S. Army Corps of Engineers, Baltimore District
5900 McArthur Boulevard, N.W.
Washington, D.C. 20016-25147

Dear Mr. Jacobus:

This is to acknowledge our office is in receipt of your request to meet with Councilmember Barry. Unfortunately, it is not possible to grant your request at this time to meet with Councilmember Barry due to long-standing meetings previously arranged. If you are interested in meeting with a member of Councilmember Barry's staff, please let me know.

Sincerely,

A handwritten signature in cursive script, appearing to read "Donna Rouse", written over a horizontal line.

Donna Rouse
Administrative Assistant

Government of the District of Columbia
ADVISORY NEIGHBORHOOD COMMISSION 3-D
P.O. Box 40846
Palisades Station
Washington, D.C. 20016

May 10, 2005

Mr. Thomas P. Jacobus, P.E.
General Manager
Washington Aqueduct
US Army Corps of Engineers
5900 MacArthur Boulevard, NW
Washington DC 20016-2514



Dear Mr. Jacobus:


Advisory Neighborhood Commission 3D held its regularly scheduled monthly meeting on May 4, 2005 at Sibley Memorial Hospital's Ernst Auditorium. A quorum (4) was present at all times. At that meeting, a Resolution on the "Environmental Impact Statement for a Proposed Water Treatment Residuals Management Process for the Washington Aqueduct, Washington DC" was adopted by the Commission. (A copy of the Resolution is attached.)

ANC3D respectfully requests that the Army Corps of Engineers extend the comment period for the DEIS for the Proposed Water Treatment Residuals management Project at the Washington Aqueduct. Further, ANC 3D requests that the comment period be extended 45 days beyond the current deadline for comments of June 2nd.

ANC3D respectfully urges other agencies and elected officials to review the DEIS carefully and to engage in meetings with neighborhood representatives before filing comments on the draft.

Thank you for your consideration of this matter.

Sincerely,


Alma Gates
Chair, ANC3D

RESOLUTION
Adopted by ANC 3D at its meeting of May 4, 2005
ENVIRONMENTAL IMPACT STATEMENT FOR A PROPOSED WATER
TREATMENT RESIDUALS MANAGEMENT PROCESS FOR THE
WASHINGTON AQUEDUCT, WASHINGTON, DC

WHEREAS, the Army Corps of Engineers in the January 12, 2004 Federal Register announced its intention to undertake an Environmental Impact Survey (EIS) as a first step toward bringing the Washington Aqueduct into compliance by 2009 with Environmental Protection Agency rules that forbid release of so-called residuals into the nation's streams and rivers (National Discharge Elimination System NPDES Permit DC0000019); and

WHEREAS the EPA order is designed to bring about an overall enhancement of environmental protections and should not result in the substitution of one environmentally unsound practice with another; and

WHEREAS the issues at hand are highly technical, the outcome of the EIS process will have a major impact on surrounding communities and the region for decades to come; and

WHEREAS the public has a right to engage in informed and serious dialogue with the Corps about potential impacts and a reasonable range of alternatives; and

WHEREAS the Spring Valley-Wesley Heights Neighborhood Association and the Palisades Citizens Association have joined neighborhood groups in Maryland (under the moniker Concerned Neighbors) in opposing the process by which the Corps narrowed its options to five "Alternatives Evaluated in Detail in the DEIS;" and

WHEREAS the general manager of the Washington Aqueduct, on March 2, 2005 appeared before the ANC to apprise the commission on the alternatives under consideration and specifically Alternative E (Dewatering at East Dalecarlia Processing); and

WHEREAS ANC 3D has expressed particular concern about the impact of Alternative E on prospective plans for a campus expansion and relocation of Little Falls Road by Sibley Hospital, as well as the visual impact of the dewatering facility and the environmental impact of trucking on neighborhood streets; and

WHEREAS in the view of ANC 3D there may exist alternative approaches which the Army Corps has failed to explore thoroughly that would enable EPA compliance by the Washington Aqueduct that would have fewer impacts on surrounding communities and prove equally or more cost-effective long term; and

WHEREAS at the request of neighborhood leaders and residents of adjacent communities of Washington, D.C. and Maryland, Reps. Eleanor Holmes Norton (DC) and Chris Van Hollen (MD), and Senators Barbara Mikulski (MD) and Paul Sarbanes (MD), in an April 21 letter to the Army Corps requested the Corps delay publication of its DEIS to provide for further meetings and input with community representatives; and

WHEREAS the Army Corps nevertheless proceeded to publish the DEIS in the Federal Register after releasing the report on April 14; and

WHEREAS the DEIS is six volumes and, upon initial review, may contain information concerning impacts which is inconsistent with the ANC's and the public's understanding to date; and

WHEREAS in any event the DEIS is immensely complex and the ANC, neighborhood associations and residents deserve ample time to review its contents:

THEREFORE, BE IT RESOLVED that ANC 3D respectfully requests that the Army Corps of Engineers (the "Corps") extend the comment period for the Draft Environmental Impact Statement (DIES) for the Proposed Water Treatment Residuals Management Project (the "Project") at the Washington Aqueduct. Specifically, the ANC requests that the comment period be extended from 45 days to 90 days, or 45 days beyond the current deadline for comments of June 2.

ANC 3D FURTHER respectfully urges agencies and elected officials of Washington, D.C. including members of the Mayor's Office, City Council representatives, the office of the City Administrator, and the directors of the Departments of Health, Public Works and Transportation in particular, to review the DEIS carefully and to engage in meetings with neighborhood representatives before filing comments on the draft.

Copies to:

Mayor Anthony Williams
Councilmember Kathy Patterson (Ward 3)
Councilmember Carol Schwartz (At-Large, Chair of Committee on DPW & Environment)
Councilmember Adrian Fenty (Ward 4, Chair of Committee on Health)
Senators: Sarbanes & Mikulski (MD)
Delegate Eleanor Holmes Norton (Washington DC)
Rep. Chris Van Hollen (MD)
Mr. Robert Bobb, City Administrator
Mr. Dan Tangherlini, Director, Department of Transportation
Dr. Gregory Pane, Director, Department of Health
Mr. Jerry Johnson, General Manager, D.C. Water & Sewer
Mr. Robert Sloan, Chief Executive Officer, Sibley Hospital
Mr. Michael Peterson, Chief Engineer, Washington Aqueduct, U.S. Army Corps

Government of the District of Columbia
ADVISORY NEIGHBORHOOD COMMISSION 3-D
P.O. Box 40846
Palisades Station
Washington, D.C. 20016

May 13, 2005

Mr. Thomas P. Jacobus, P.E.
General Manager
Washington Aqueduct
US Army Corps of Engineers
5900 MacArthur Boulevard, NW
Washington DC 20016-2514

Dear Mr. Jacobus:

Advisory Neighborhood Commission 3D held its regularly scheduled monthly meeting on May 4, 2005 at Sibley Memorial Hospital's Ernst Auditorium. A quorum (4) was present at all times. At that meeting, a Resolution on the "Environmental Impact Statement for a Proposed Water Treatment Residuals Management Process for the Washington Aqueduct, Washington DC" was adopted by the Commission. (A copy of the Resolution is attached.)

ANC3D respectfully requests that the Army Corps of Engineers extend the comment period for the DEIS for the Proposed Water Treatment Residuals management Project at the Washington Aqueduct. Further, ANC 3D requests that the comment period be extended 45 days beyond the current deadline for comments of June 2nd.

ANC3D respectfully urges other agencies and elected officials to review the DEIS carefully and to engage in meetings with neighborhood representatives before filing comments on the draft.

Thank you for your consideration of this matter.

Sincerely,



Alma Gates
Chair, ANC3D

RESOLUTION
Adopted by ANC 3D at its meeting of May 4, 2005
ENVIRONMENTAL IMPACT STATEMENT FOR A PROPOSED WATER
TREATMENT RESIDUALS MANAGEMENT PROCESS FOR THE
WASHINGTON AQUEDUCT, WASHINGTON, DC

WHEREAS, the Army Corps of Engineers in the January 12, 2004 Federal Register announced its intention to undertake an Environmental Impact Survey (EIS) as a first step toward bringing the Washington Aqueduct into compliance by 2009 with Environmental Protection Agency rules that forbid release of so-called residuals into the nation's streams and rivers (National Discharge Elimination System NPDES Permit DC0000019); and

WHEREAS the EPA order is designed to bring about an overall enhancement of environmental protections and should not result in the substitution of one environmentally unsound practice with another; and

WHEREAS the issues at hand are highly technical, the outcome of the EIS process will have a major impact on surrounding communities and the region for decades to come; and

WHEREAS the public has a right to engage in informed and serious dialogue with the Corps about potential impacts and a reasonable range of alternatives; and

WHEREAS the Spring Valley-Wesley Heights Neighborhood Association and the Palisades Citizens Association have joined neighborhood groups in Maryland (under the moniker Concerned Neighbors) in opposing the process by which the Corps narrowed its options to five "Alternatives Evaluated in Detail in the DEIS;" and

WHEREAS the general manager of the Washington Aqueduct, on March 2, 2005 appeared before the ANC to apprise the commission on the alternatives under consideration and specifically Alternative E (Dewatering at East Dalecarlia Processing); and

WHEREAS ANC 3D has expressed particular concern about the impact of Alternative E on prospective plans for a campus expansion and relocation of Little Falls Road by Sibley Hospital, as well as the visual impact of the dewatering facility and the environmental impact of trucking on neighborhood streets; and

WHEREAS in the view of ANC 3D there may exist alternative approaches which the Army Corps has failed to explore thoroughly that would enable EPA compliance by the Washington Aqueduct that would have fewer impacts on surrounding communities and prove equally or more cost-effective long term; and

WHEREAS at the request of neighborhood leaders and residents of adjacent communities of Washington, D.C. and Maryland, Reps. Eleanor Holmes Norton (DC) and Chris Van Hollen (MD), and Senators Barbara Mikulski (MD) and Paul Sarbanes (MD), in an April 21 letter to the Army Corps requested the Corps delay publication of its DEIS to provide for further meetings and input with community representatives; and

WHEREAS the Army Corps nevertheless proceeded to publish the DEIS in the Federal Register after releasing the report on April 14; and

WHEREAS the DEIS is six volumes and, upon initial review, may contain information concerning impacts which is inconsistent with the ANC's and the public's understanding to date; and

WHEREAS in any event the DEIS is immensely complex and the ANC, neighborhood associations and residents deserve ample time to review its contents:

THEREFORE, BE IT RESOLVED that ANC 3D respectfully requests that the Army Corps of Engineers (the "Corps") extend the comment period for the Draft Environmental Impact Statement (DIES) for the Proposed Water Treatment Residuals Management Project (the "Project") at the Washington Aqueduct. Specifically, the ANC requests that the comment period be extended from 45 days to 90 days, or 45 days beyond the current deadline for comments of June 2.

ANC 3D FURTHER respectfully urges agencies and elected officials of Washington, D.C. including members of the Mayor's Office, City Council representatives, the office of the City Administrator, and the directors of the Departments of Health, Public Works and Transportation in particular, to review the DEIS carefully and to engage in meetings with neighborhood representatives before filing comments on the draft.

RESOLUTION TO BE ADDRESSED TO;

Mr. Thomas P. Jacobus, P.E. ✓
General Manager
Washington Aqueduct
U.S. Army Corps of Engineers
5900 MacArthur Boulevard, NW
Washington, D.C. 20016-2514

AND COPIED TO:

Mayor Anthony Williams
Councilmember Kathy Patterson (Ward 3)
Councilmember Carol Schwartz (At-Large, Chair of Committee on DPW & Environment)
Councilmember Adrian Fenty (Ward 4, Chair of Committee on Health)
Directors of DOH, DPW and DDOT
Senators: Sarbanes & Mikulski (MD)
Delegate Eleanor Holmes Norton (Washington DC)
Rep. Chris Van Hollen (MD)



Council of the District of Columbia
1350 Pennsylvania Avenue, N.W., Suite 105
Washington, D.C. 20004

Carol Schwartz
Councilmember, At - Large

Tel: (202) 724-8105
Fax: (202) 724-8071
carol.schwartz@dc.gov

May 27, 2005

Mr. Thomas P. Jacobus, General Manager
Washington Aqueduct
U.S. Army Corps of Engineers, Baltimore District
5900 MacArthur Boulevard NW
Washington, DC 20016

Erin Jacobus

Dear Mr. Jacobus:

I am writing again in reference to the water treatment residuals project at the Dalecarlia Reservoir and the concerns that have been expressed by residents in the neighborhood surrounding the reservoir about the draft environmental impact study (EIS) process for this project. This is to let you know that I have contacted Congresswoman Eleanor Holmes Norton, Senators Paul Sarbanes and Barbara Mikulski and Congressman Chris Van Hollen to see if they would like to join me in requesting that the Corps of Engineers extend the public comment period regarding this draft EIS beyond the current closing date of June 6. Once again, I ask that the public be given an additional 45 days beyond June 6 in order to submit comments on this controversial project.

I look forward to your response.

Sincerely,

Carol Schwartz

Carol Schwartz
Councilmember, At-Large
Chair, Committee on Public Works
and the Environment

cc: Congresswoman Eleanor Holmes Norton
Senator Paul Sarbanes
Senator Barbara Mikulski
Congressman Chris Van Hollen

COUNCIL OF THE DISTRICT OF COLUMBIA

June 3, 2005

Mr. Thomas P. Jacobus
General Manager
Washington Aqueduct
U.S. Army Corps of Engineers, Baltimore District
5900 MacArthur Boulevard, N.W.
Washington, D.C. 20016

Via Facsimile

Dear Mr. Jacobus:

We are writing in support of ANC 3D's request for a 45-day extension of the current June 6 deadline for public comment on the Corps' Draft Environmental Impact Statement on water treatment residuals management.

ANC 3D and others have requested additional time to analyze the contents of the DEIS, which is over a thousand pages long and contains highly-technical information on the environmental, health and traffic impacts of the Corps' proposed dewatering facility.

This request is entirely reasonable given the amount of data contained in the report and the potential impact of a permanent trucking scheme on residents of ANC 3D and nearby Maryland neighborhoods.

In addition, as the Aqueduct is responsible for providing drinking water to all of the city's residents, along with residents of Fairfax and Falls Church, Virginia, additional time is necessary to give elected officials and city administrators an opportunity to fully review the draft report and prepare their comments.

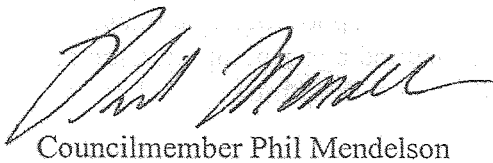
We share ANC 3D's interest in learning how the proposed approach to residuals removal, which the Aqueduct is undertaking in order to comply with an EPA order to comply with the Clean Water Act, benefits surrounding communities in terms of limiting impacts and increasing environmental quality.

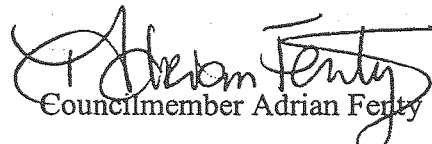
We appreciate your consideration of the extension request.

Sincerely,


Councilmember Jim Graham


Councilmember David A. Catania


Councilmember Phil Mendelson


Councilmember Adrian Fertty

GOVERNMENT OF THE DISTRICT OF COLUMBIA
Department of Health
Environmental Health Administration

Office of the Senior Deputy Director



July 5, 2005

Michael C. Peterson, Environmental Engineer
U.S. Army Corps of Engineers, Baltimore District
Washington Aqueduct
5900 MacArthur Boulevard, N.W.
Washington, D.C. 20016

Re: Draft Environmental Impact Statement for Proposed Residuals Management Process

Dear Mr. Peterson:

The Environmental Health Administration has reviewed the Draft Environmental Impact Statement for a Proposed Water Treatment Residuals Management Process for the Washington Aqueduct, D.C. (April 2005) (DEIS), and offers the following comments:

The alternatives evaluated in the DEIS, with the exception of Alternative D ("no action"), will considerably reduce sediment discharges to the Potomac River. This will result in significant improvement of the water quality and aquatic life of the river. Alternative A, dewatering at the northwest Dalecarlia processing site and disposal by monofill, would destroy 30 acres of forested habitat.

The DEIS discussion of the dewater/processing facility, reservoir pumping stations, and forebay upgrade revealed some groundwater issues that need to be addressed. These issues include (1) the northwest processing site, oily smell noted during soil borings (pages 3-36, 4-35); east processing site, remnants of demolished building and oily material below ground, currently undergoing investigation (page 4-38); and forebay modification, Georgetown Booster Pump, groundwater control / management (pages 4-43, 4-40). These issues can be addressed during the implementation of the selected alternative. The Water Quality Division will work with the Washington Aqueduct to resolve these issues, to mitigate any potential adverse impacts to the groundwater, surface water, and drinking water. In addition, the Washington Aqueduct should comply with the District's sediment control and storm water management regulations for proposed on-site construction activities involving land disturbance. Due to the close proximity of Dalecarlia to the Potomac River, we recommend that the Corps consider extra measures to address erosion and sediment control.

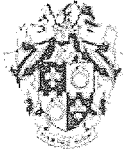
With respect to air quality, a review of the five alternatives discussed in the DEIS indicates that all, except Alternative D (no action), would involve truck traffic and would likely add to vehicular congestion and exacerbate air pollution in the affected areas. Alternatives A, B, and E would affect the areas near the Dalecarlia, while Alternative C would affect Blue Plains, which is working to eliminate the trucking of sludge and which, in any event, is unable to handle the residuals due to space limitations. The transfer of truck traffic from Dalecarlia to Blue Plains is not a viable option. The Corps' recommended option, Alternative E, would involve off-site trucking. The impact of truck traffic on air quality could be mitigated if the contractors could be required to retrofit their diesel trucks. The feasibility of such action should be investigated. In addition, to delineate the extent of the impacts on air quality, the final environmental impact statement should evaluate the air quality impact through a traffic study and air quality analysis.

A number of options were evaluated that did not survive the ranking process; however, the Environmental Health Administration remains interested in the proposed option of piping the solids for processing to another industrial site, such as the Naval Surface Warfare Center at Carderock. This site contains adequate space to separate and buffer the residuals management process from any residential neighborhoods. It is also close to the Beltway, which would help to mitigate trucking impacts. We also believe that this alternative would provide an environmentally acceptable solution that is supported by the residents of the District of Columbia and Maryland, and would support further discussion between the two federal agencies to determine if this option or another piping option is viable.

Sincerely,



MARIE SANSONE
Interim Senior Deputy Director



MONTGOMERY COUNTY COUNCIL

ROCKVILLE, MARYLAND

June 23, 2005

Mr. Thomas P. Jacobus
General Manager
Washington Aqueduct
U.S. Army Corps of Engineers, Baltimore District
5900 MacArthur Boulevard, N.W.
Washington, D.C. 20016-2514

J 6/28/05

Re: Washington Aqueduct Residuals Project

Dear Mr. Jacobus:

As County Councilmembers who represent the area most affected by this proposal, we are writing to reiterate our concerns about the Corps' preferred alternative (trucking) under the Draft Environmental Impact Statement ("DEIS") for the Washington Aqueduct Residuals Project. This long-established neighborhood is extremely worried about the Corps' failure to consider the full environmental, safety and economic impacts of trucking the residuals from the Dalecarlia Water Treatment Plant along a single route in Montgomery County. We would like a written update on the Corps' plans to consider other alternatives that would place less of a burden of this project on residents of Montgomery County. We also offer our assistance in identifying alternative piping routes and disposal locations.

Contrary to your public assertions that the Corps will only need to use 8 trucks per day, a careful reading of the footnotes to Table 3-6 in the DEIS (which clarify that the numbers listed are for one way trips only using 20 ton trucks for just the next eleven years), demonstrates that *up to 132 ten ton truck trips per day* could be traveling local Montgomery County roads during the wet season. This figure far exceeds the number of truck trips per day that you have consistently referred to in public meetings. Similarly, while you have allegedly evaluated eight trucking routes, a careful reading of the DEIS shows that only one truck route would be used: Dalecarlia Parkway to Western Avenue to River Road to the Beltway. We have serious concerns about your failure to evaluate the full environmental, safety and economic impacts of using this single route to "solve" the Aqueduct's water treatment residuals disposal problem.

The DEIS also fails to consider the full costs of operating so many trucks over the life of this project. If these costs had been fully considered, trucking would not have survived the Corps' screening criteria to become its "preferred" alternative. These costs are likely to be substantial.

STELLA B. WERNER COUNCIL OFFICE BUILDING, 100 MARYLAND AVENUE, ROCKVILLE, MARYLAND 20850

240/777-7900 TTY 240/777-7914 FAX 240/777-7989

WWW.CO.MO.MD.US/COUNCIL



based upon information that the Corps considered more than ten years ago. The actual cost of operating this many trucks, 5 days a week, for an indefinite number of years, is a key component of the true cost of the trucking option, and appears to have been excluded from the identified \$47,600,000 cost to "construct" this option as described in the DEIS. In particular, we are concerned about what the cost of operating such a large number of trucks will have on Montgomery County's roads. If you are to proceed with this alternative, we would note that Montgomery County roads will incur additional wear and tear. We respectfully request that you include sufficient funding in the cost of this option to pay for the impact on our local streets.


Our final concern has to do with the impacts that the trucking option will have upon Montgomery County's air quality and the health and safety of our citizens. The DEIS that the Corps released on April 14, 2005 contained virtually no analysis of the environmental or safety impacts of the Corps' preferred alternative. The environmental impacts of this alternative are significant in light of the fact that our region is already suffering severe non-attainment under current Clean Air Act ("CAA") standards and serious traffic congestion. Diesel fumes from trucks contain known carcinogens and have been documented as increasing the number of asthma cases along heavily traveled highways. The additional air pollution created by the large volume of trucks that will be concentrated along a single route in Montgomery County will be significant and will adversely impact the health of our children and elderly citizens residing along the preferred trucking route. Again, we request that you provide us with your analysis of this issue and describe what steps the Corps is planning to mitigate this danger.

The Montgomery County Council is closely monitoring this project. We strongly encourage you to give the concerns of our constituents greater weight and to ensure that, before choosing the final residual management plan, every consideration be given as to that plan's compatibility within a large established residential area. We again offer our assistance in identifying piping routes and other disposal locations that would have a fewer adverse environmental, safety and economic impacts upon residents of Montgomery County.

Sincerely,



Nancy Floreen
At-Large Councilmember
Chair, Transportation and Environment
Committee



Howard A. Denis
District 1 Councilmember
(Bethesda, Chevy Chase, Potomac)



THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION
Office of the Chairman, Montgomery County Planning Board

June 1, 2005

Thomas P. Jacobus, P.E.
General Manager
Washington Aqueduct
U.S Army Corps of Engineers
5900 MacArthur Boulevard, N.W.
Washington, D.C. 20016-2514

Dear Mr. Jacobus:

Thank you for the opportunity to review with you and the Planning Board on May 19, 2005 the *Draft Environmental Impact Statement for a Proposed Water Treatment Residuals Management Process for the Washington Aqueduct, April 2005*.

As you are aware, the Planning Board discussed the lack of complete information on which to form a reasoned judgment on selecting a preferred alternative from the DEIS, citing many unanswered issues, including additional alternatives for piping residuals to private sites for processing in other areas of the region, including Montgomery County.

On motion of Commissioner Robinson, the Board voted 4-0, Commissioner Perdue absent, the following points recommended for your consideration:

- Piping residuals to a private industrial site for processing and hauling
- Prepare a more formal haul dispersion plan
- Provide quantification of truck impacts on local road surfaces with methods of local reimbursement.

We strongly recommend that the Washington Aqueduct consider additional alternatives taking into account the points identified by the Board.

In regard to Montgomery County, the Commission's Community-Based Planning Division can offer planning assistance in locating sites for the dewatering facilities and pipeline routes. Should you determine to pursue this initiative, we recommend that you also contact the Montgomery County Department of Environmental Protection for advice on any modifications to Montgomery County's Comprehensive Water and Sewerage

Systems Plan, as they are the lead agency for identifying elements of water treatment systems in the county.


Much discussion also arose about the haul routes through Montgomery County and the actual number of trucks that would transit on local roads on any given day. We offer assistance in identifying additional haul routes and parameters of usage, including any necessary road improvements, through our Transportation Planning staff.

The Planning Board recognizes the extremely challenging sites proposed for dewatering currently considered in the DEIS. We strongly urge the Washington Aqueduct to reconsider and seek a location more proximate to the Capital Beltway, where piped-in residuals may be processed, so that truck traffic through local neighborhoods will be reduced.

In the event that no prudent alternative can be found—other than the sites currently in the DEIS—we believe use of the East Dalecarlia site requires much greater minimizing in the final EIS, to protect adjacent properties from operational and truck noise and disruption.

If you have any questions or need some further assistance on the contents of this letter, please contact Jorge A. Valladares, P.E., Chief of Environmental Planning at (301) 495-4545.

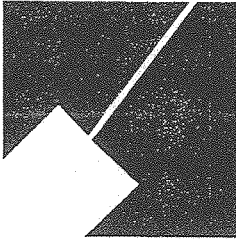
Sincerely,



Derick P. Berlage
Chairman

DPB:JV:ss

cc County Executive
 County Council
 Charles Loehr, M-NCPPC
 Andy Brunhart , WSSC
 Jim Caldwell, DEP

MCPB
Item # 4
5/19/05

Montgomery County Planning Board

From: Countywide Planning Division (301/495-4545)

May 13, 2005

Subject: Draft Environmental Impact Statement for a Proposed Water Treatment
Residuals Management Process for the Washington Aqueduct.
Mandatory Referral # 05002-DA-1.

STAFF RECOMMENDATIONS:

- Support Alternative E.
- Multiple haul routes should be established and selected on a trip-by-trip basis depending upon the destination to minimize total truck travel. Trucks should only use haul routes in Montgomery County for travel to destinations either in Montgomery County or other Maryland jurisdictions north of Montgomery County.
- Haul Route "C" is not recommended as a suitable route because the portion of Little Falls Parkway incorporated in the haul route has a posted restriction prohibiting commercial vehicle use.
- Either Haul Route "A" or Haul Route "B" would be acceptable for trips traveling into Montgomery County.

Truck trips should be concentrated during off-peak travel times during weekdays between 9:30 a.m. and 4:00 p.m.

The Planning Board recommendations are to be sent to the U.S. Army Corps of Engineers, Baltimore District prior to 5:00 p.m., June 6, 2005.

PART I. BACKGROUND

The purpose of this briefing is to present staff recommendations on the *Draft Environmental Impact Statement for a Proposed Water Treatment Residuals Management Process for the Washington Aqueduct*, April 2005. Readers may refer to the website at <http://washingtonaqueduct.nab.usace.army.mil/aqueduct.htm> for a full DEIS text.

Please refer to the Executive Summary, attachment # 1, for a synopsis of this proposed project. In brief, the U.S. Army Corps of Engineers is under an order to comply with its National Pollutant Discharge Elimination System (NPDES) permit within the Federal Facilities Compliance Agreement (FFCA) deadlines, for its potable water treatment facility at Dalecarlia. In the past, the Washington Aqueduct was allowed to discharge its water treatment process residuals back into the Potomac River. Their new permit rescinds that practice forcing the residuals to be disposed in a different manner.

PART II. ALTERNATIVES

The proposed action is to develop, design and construct a permanent residuals management system to satisfy NPDES requirements within the agreed upon deadline.

The following five alternatives are those that have been carried forward in the DEIS. Refer to attachment # 2 for a project area map.

SPECIFIC ALTERNATIVES

Alternative A: Dewatering at northwest Dalecarlia processing site (Montgomery County) and disposal by monofill in D.C.

Alternative B: Dewatering at northwest Dalecarlia processing site and disposal by trucking.

Alternative C: Thickening and piping to Blue Plains advanced wastewater treatment plant.

Alternative D: No Action Alternative. Maintained as a NEPA requirement. This alternative would continue residuals discharge to Potomac River, a de facto violation of the new NPDES permit.

Alternative E: Dewatering at east Dalecarlia processing site (in D.C.) and disposal by trucking. Following processing, the dewatered residuals would be contract hauled to a permitted offsite disposal facility. Up to 20 truck trips per weekday of dewatered residuals are expected to be transported from the processing site on average. Higher numbers of truck trips, as defined in Volume 4- Engineering Feasibility Study Compendium-, would be required during peak residuals production periods. Some haul routes are through Montgomery County. Table 2-1 provides the basis for residuals estimates.

TABLE 2-1

Washington Aqueduct Basis for Residuals Quantities

Residuals	Daily Generated Volume (Cubic Yards) ^a		Truck Trips/Day ^b			
			22 Cubic Yards/ Truck		11 Cubic Yards/ Truck	
	Current Average	Design Year Average	Current Average	Design Year Average	Current Average	Design Year Average
Water Treatment	94	120	7	8	13	16
Forebay	22	28	2	2	3	4

^a Based on 7 days per week production.

^b Based on hauling to a final disposal site 5 days per week.

SELECTION OF THE PREFERRED ALTERNATIVE

Each of the alternatives evaluated (with the exception of the No Action Alternative) necessitate developing infrastructure in an urban setting, characterized by important natural and man-made resources. All five of the alternatives (including the No Action Alternative) evaluated to meet this federally mandated action will carry some degree of impact. Of particular concern is the ability of an alternative to meet the project's purpose and need, while minimizing impacts to the communities surrounding the potential operations, no matter where they be located. Particular emphasis was naturally placed in evaluating impacts near the Dalecarlia Reservoir, Dalecarlia Water Treatment

Plant (WTP), Georgetown Reservoir, and Blue Plains Advanced Wastewater Treatment Plant (AWWTP) facilities, as well as intermediate conveyance areas potentially impacted by Alternative C, the pipeline alternative. The preferred alternative for the DEIS should be the alternative that best meets the objectives of the project, as stated in the Notice of Intent (published in the *Federal Register* on January 12, 2004).

The following sources of information were considered by Washington Aqueduct while selecting the proposed action from the five possible residuals alternatives:

- Information on the potential impacts revealed by the technical evaluation (detailed in Sections 3 and 4 of the DEIS),
- Ideas and concerns raised by the public during five open public meetings or submitted directly to Washington Aqueduct staff, and
- Consultations with regulatory authorities at the federal, state, and local levels (detailed in Section 4 of the DEIS).

Both Alternatives A (Dewatering and Disposal by Monofill) and C (Thickening and Piping to Blue Plains AWWTP) have beneficial elements that contribute to the objectives of the Clean Water Act and NEPA, by enabling the Washington Aqueduct to stop discharging residuals into the Potomac River, and prevent residuals-bearing trucks from traveling on local community roads nearest to the Dalecarlia WTP facilities. However, implementation of Alternatives A and C would not allow Washington Aqueduct to comply with the Federal Facility Compliance Agreement schedule issued by the U.S. Environmental Protection Agency (USEPA), and they both would have significant long-term adverse impacts on various natural and community resources.

More specifically, during the course of this NEPA process, it has been learned that the development of Alternative A is not consistent with the schedule for investigations of this site by the U.S. Army Corps of Engineers for its ongoing remediation efforts for the American University Experimental Station (AUES), Formerly Used Defense Site (FUDS) project. Further, Alternative C, like the other piping alternatives examined during the screening process, is not consistent with the District of Columbia Water and Sewer Authority's (DC WASA's) long-term plans for its Blue Plains AWWTP and is more than double the cost of each of the other alternatives. Both alternatives would have unacceptably large potential visual, cultural, forest habitat, and perhaps recreational, impacts.

Alternative D, the no-action alternative, cannot be selected by the Washington Aqueduct because it would place it in violation of the Federal Clean Water Act, the terms

of their NPDES permit, and the FFCA issued by USEPA. Throughout the DEIS preparation process, USEPA has confirmed that they would be unwilling to modify the NPDES permit to allow the Washington Aqueduct to return to a residuals disposal practice consistent with the No Action alternative, despite the Washington Aqueduct's consideration of it and a number of similar river discharge alternatives during this process.

The Washington Aqueduct selected between Alternatives B and E for the proposed action. Both alternatives can be implemented within the required timeframe with a much greater degree of certainty than is possible for either Alternative A or C. The costs of these alternatives are consistent with the project budget, which is wholly dependent for financial support from the three local wholesale water customers and the rate-paying public. Both alternatives, as did the other action ones, feature residuals processing with trucking, albeit to off-site disposal locations. They differ in the location of the processing facilities and the location in which the trucks enter the local roadways. Alternative B would construct the residuals processing facility at the northwest Dalecarlia WTP location in Montgomery County and the trucks would enter the local roadways at the existing facility entrance to MacArthur Boulevard. Alternative E would construct the residuals processing facilities at the east Dalecarlia WTP location in D.C. and trucks would enter the local roadways at the existing intersection of Little Falls Road and Dalecarlia Parkway. These differences form the basis of the tradeoffs between each alternative.

Alternatives B and E present equally feasible options, from an engineering perspective, for a residuals management program that eliminates residuals discharge to the Potomac River. Each would enable the Aqueduct to meet the conditions of the recent Permit No. DC 0000019 within the schedule put forth in its Federal Facilities Compliance Agreement with the USEPA. Alternative E offers advantages in the following areas:

- Less visual impact to surrounding residential neighbors
- Site topography allows impacts to be minimized
- Less truck noise attributable to residuals trucks traveling on Loughboro Road
- Greater distance between surrounding neighborhoods and proposed residuals processing facilities
- Fewer apparent soils issues

Therefore, Alternative E—Dewatering at east Dalecarlia processing site and disposal by trucking is recommended as the Proposed Action for the DEIS.

PART III. PROPOSED RESIDUALS HAUL ROUTES

The Washington Aqueduct Residuals Management Project includes the dredging of the Dalecarlia and Georgetown Reservoirs, and the subsequent haulage of the residuals

to various sites, which are primarily accessible via the Capital Beltway (I-495). The proposed haulage operations would occur generally between 6:00 a.m. and 4:00 p.m., and be concentrated between 9:00 a.m. and 3:00 p.m., on weekdays only. The haulage activity would have a minimal impact on the morning peak period and would have no impact on the afternoon peak period, by restricting hauling to this timeframe.

All hauling routes analyzed, with the exception of southeastern route H, were considered previously by the Washington Aqueduct for dredging the Dalecarlia Reservoir. Prior to September 11, 2003, the southern routes were feasible for trucking residuals through the District of Columbia. New security measures adopted after September 11, 2003 have limited the roadways where trucks may travel making routes F and G infeasible. In response, a new haul route has been proposed that directs truck traffic from the Dalecarlia WTP to the south, ultimately connecting with I-395. This route has been designated Route H.

Eight potential haul routes (A to H), as illustrated in attachment # 3, have been evaluated within the DEIS. Five of those routes connect Dalecarlia to the Capital Beltway. The remaining three routes connect Dalecarlia to the Southeast/Southwest Freeway. The eight routes are as follows:

- Route A - To the north via MacArthur Boulevard—Loughboro Road—Dalecarlia Parkway—Western Avenue—Wisconsin Avenue (MD 355)—Capital Beltway (I-495).
- Route B - To the northwest via MacArthur Boulevard—Loughboro Road—Dalecarlia Parkway—Western Avenue—River Road (MD 190)—Capital Beltway (I-495).
- Route C - To the northwest via MacArthur Boulevard—Loughboro Road—Dalecarlia Parkway—Massachusetts Avenue (MD 396)—Little Falls Parkway—River Road (MD 190)—Capital Beltway (I-495).
- Route D - To the west via MacArthur Boulevard—Arizona Avenue—Canal Road—Chain Bridge Road (VA 123)—Dolley Madison Boulevard (VA 123) - Dulles Access/Toll Road - Capital Beltway (I-495).
- Route E - To the west via MacArthur Boulevard - Arizona Avenue - Canal Road - Chain Bridge Road (VA 123) - Georgetown Pike (VA 193) - Capital Beltway (I-495).
- Route F - To the southeast via MacArthur Boulevard-Loughboro Road-Dalecarlia Parkway-Massachusetts Avenue-23rd Street-Constitution Avenue-9th Street (Tunnel)-Southwest/Southeast Freeway (I-395).

- Route G-To the southeast via MacArthur Boulevard-Canal Road-Whitehurst Freeway-23rd Street-Constitution Avenue-9th Street (Tunnel)-Southwest/Southeast Freeway (I-395).
- Route H- To the southeast via MacArthur Boulevard-Loughboro Road-Dalecarlia Parkway-Massachusetts Avenue-Mount Vernon Square-New York Avenue-Southwest/Southeast Freeway (I-395) (In reverse direction, Southwest/Southeast Freeway (I-395)-2nd NW-Massachusetts Avenue-7th Street-Mount Vernon Square-Massachusetts Avenue-Dalecarlia Parkway-Loughboro Road-MacArthur Boulevard.

The DEIS evaluated all potential haul routes based on their functional and service characteristics. Key criteria included peak versus off-peak directional patterns, ADT/Lane Configuration and Level-of-Service relationships, vehicle classification characteristics, travel time - distance relationships, capacity/operational constraints, safety deficiencies and impacts on “sensitive” land uses.

A factor complicating evaluation of the haul routes is not knowing where the residuals ultimate destination or destinations will be located. Only routes passing through Montgomery County will be commented upon by staff.

Three haul routes, A, B and C pass through Montgomery County. Route A passes through Friendship Heights and Bethesda along Wisconsin Avenue, both very heavily traffic impacted areas. Route B misses Friendship Heights by turning along Western Avenue at River Road. Route C utilizes Little Falls Parkway, a major constraint.

The eight routes can be characterized in three groups, organized geographically as follows:

- Routes A, B, and C extend in a northwesterly direction toward the Capital Beltway in Montgomery County
- Routes D and E extend in a westerly direction toward the Capital Beltway in Fairfax County, Virginia
- Routes F, G, and H extend in a southeasterly direction toward the Southeast/Southwest Freeway in Washington, DC.

Each of the routes require travel on six to eight miles of local arterial roadway, so no one route or set of routes is clearly advantageous for all possible destinations. Staff finds that at least three haul routes should be established with one route selected from each of the three geographic groups described above. For each trip, the haul route chosen should be one that minimizes total travel distance to the destination. For destinations in Montgomery County, or Maryland jurisdictions north of Montgomery County, Haul Routes A and B would be suitable.

Staff finds that Haul Route C should not be recommended as a suitable route because it incorporates a portion of Little Falls Parkway between Massachusetts Avenue (MD 396) and River Road (MD 190) on which commercial vehicles are prohibited.

In Montgomery County, Haul Routes A and B consist of those portions of Wisconsin Avenue (MD 355) and River Road (MD 190), respectively, between the Capital Beltway and the District of Columbia. Staff finds that Haul Routes A and B are very similar in sharing the following characteristics:

- Approximately four miles in length between the Capital Beltway and the Washington DC boundary
- Classified as multilane, divided, Major Highways in the County's Master Plan of Highways
- No prohibitions on truck traffic
- Carry approximately 60,000 vehicles per day in the vicinity of the Capital Beltway
- Congestion levels prompted the Planning Board to seek initiation of State Highway Administration Development and Evaluation studies based on the July 2004 Annual Development Approval and Congestion Report

The differences between Wisconsin Avenue and River Road are primarily related to adjacent land uses, which have sensitivity to truck traffic for different reasons. Wisconsin Avenue serves the pedestrian-oriented central business districts of Friendship Heights and Bethesda. Based in part on the pedestrian activity, posted speed limits range from 25 MPH to 35 MPH. River Road serves lower density communities in the Bethesda-Chevy Chase planning area and is generally lined with residential and institutional uses, excepting the Westbard Sector Plan area. Posted speed limits range from 35 MPH to 45 MPH.

Staff finds that neither the pedestrian-oriented developments along Wisconsin Avenue nor the low-density residential communities along River Road to be clearly superior or inferior in determining the appropriateness of a haul route. Both routes carry in excess of 2,000 trucks per day near the Capital Beltway, so the effect of truck traffic anticipated by the proposed action (up to 40 vehicles per day on all haul routes combined) is not expected to be observable on either route. Staff therefore finds that either Haul Route A (Wisconsin Avenue) or Haul Route B (River Road) would be an appropriate designation.

Staff does not concur with the DEIS finding that Wisconsin Avenue and River Road operate at acceptable levels of service based on M-NCPPC standards. As described above, substandard congestion levels exist during peak periods along both candidate

routes as identified in the July 2004 Annual Development and Congestion Report. Staff therefore recommends that the truck trips be scheduled to occur after the end of the morning peak period and before the beginning of the evening peak period. Based on the peak period definitions in the Planning Board's Local Area Transportation Review Guidelines, the truck travel should be scheduled to occur between 9:30 a.m. and 4:00 p.m.

Full Transportation Planning staff comments are in attachment # 4.

PART IV. COST

The potential cost to the customers represented by the proposed alternatives takes into consideration both initial capital costs and long-term operational and maintenance costs.

COST SIGNIFICANCE CRITERIA

No Impact

An alternative has no impact on cost if its capital cost (in 2004 dollars) is below the \$50,000,000.00 capital budget allocation for the residuals project.

No Significant Impact

An alternative has no significant impact on cost if its capital cost (in 2004 dollars) is above the \$50,000,000.00 capital budget allocation for the project but below an amount equal to 30 percent over the budget allocation, or \$65,000,000.00.

Significant Impact

An alternative has a significant impact on cost if its capital cost (in 2004 dollars) is above \$65,000,000.00.

IMPACT EVALUATION BY ALTERNATIVE AND OPTION

For this resource, impacts are described by alternative, rather than by both treatment facility and alternative. For each alternative, the initial capital cost and the estimated annual costs are used to calculate the present worth, or present value of the project, using a 20-year evaluation period. It is assumed that present worth costs have a directly proportional impact on the rates charged by the Washington Aqueduct's wholesale customers. For this reason, present worth costs are useful for comparing and ranking the alternatives from a life cycle cost perspective. Specific rate impacts for each alternative have not been prepared for the DEIS. Cost serves as only one of the decision variables used to select the preferred alternative.

Table 4-6 presents a summary of the construction costs for the four alternatives (excluding Alternative D—No Action Alternative) that are evaluated in detail in this DEIS. These figures are prepared at an order of magnitude level. Costs for sedimentation and residuals collection options are also summarized in Table 4-8. As was discussed in Section 4 of the Engineering Feasibility Study Compendium, previous cost estimates by Whitman Requardt and Associates for facilities such as residuals conveyance through the Georgetown Conduit, thickening, and dewatering were updated for inflation and used as the basis for this estimate. New construction cost estimates were developed for other facilities, such as the modifications to the sedimentation basins and the residuals collection equipment for the Georgetown Reservoir and the Forebay. For Alternative C—Thickening and Piping to Blue Plains AWWTP, it was assumed that a dewatering building, equivalent in cost to the one proposed for the Dalecarlia WTP, would need to be constructed at Blue Plains AWWTP. The cost for the monofill was based on the cost for a monofill of similar size, constructed in Northern Virginia in the mid-1990s for lime residuals. Actual bid costs were used as the basis for the estimate and were updated for inflation.

Based on the construction costs listed in Table 4-7, Alternative A would have no significant impact on cost because its cost is between \$50,000,000.00 and \$65,000,000.00. Alternatives B and E would have no impact on cost because their costs are each below \$50,000,000.00. Alternative C has significant impact on cost because its cost is well above \$65,000,000.00 and between 2.5 and 3.0 times the cost of the other three alternatives.

Table 4-7 presents preliminary present worth costs for each of the four alternatives evaluated in detail in the DEIS. Each alternative assumes that the existing Dalecarlia sedimentation basins will be retrofitted with residuals collection equipment and that new dredging equipment will be installed in the Georgetown Reservoir to collect residuals, along with a thickening and dewatering facility. The present worth cost was calculated for a 20-year project life at a discount factor (interest rate) of 3 percent.

Table 4-8 is a summary of the assumptions used to create the annual operations and maintenance (O&M) costs used in the evaluation. At this preliminary level of detail, the general conclusion is that Alternative A—Dewatering at Northwest Dalecarlia Processing Site and Disposal by Monofill has the lowest present worth cost. Onsite processing with hauling of dewatered residuals to an offsite location (Alternatives B and E) has the second lowest present worth cost, Alternative C—Thickening and Piping to Blue Plains AWWTP has the highest present worth cost.

The costs presented in this DEIS are preliminary. It is important to note that cost is only one of the factors considered in choosing the recommended alternative for

implementation. This DEIS evaluates other factors specifically pertaining to environmental and other impacts that will be used by Washington Aqueduct to choose the recommended alternative for implementation.

TABLE 4-6
Order-of-Magnitude Construction Cost Summary for the Selected Alternatives

Cost Item	Alternative A Dewatering at Northwest Dalecarlia Processing Site and Disposal by Monofill	Alternatives B and E Dewatering at Northwest or East Dalecarlia Processing Site and Disposal by Trucking	Alternative C Thickening and Piping to Blue Plains AWWTP
Retrofit of Existing Basins with Collection Equipment	\$14,200,000	\$14,200,000	\$14,200,000
Dredging System at Georgetown	\$2,400,000	\$2,400,000	\$2,400,000
Subtotal—Sedimentation and Residuals Collection			\$16,600,000
Gravity Thickeners and Thickened Residuals Pump Station			\$9,700,000
Dewatering Building	\$19,700,000	\$19,700,000	\$19,700,000
Miscellaneous Support Facilities	\$1,600,000	\$1,600,000	\$1,600,000
Subtotal—Collection and Processing Facilities			\$47,600,000
Dalecarlia Monofill			—
Thickened Residuals Pump Station and Pipeline			\$95,000,000
Total Construction Cost (\$2004)	\$54,300,000	\$47,800,000	\$142,600,000
Construction Cost Escalated to Mid-Point of Construction (July 2008)			\$165,100,000

TABLE 4-7
Net Present Value for the Selected Alternatives

Residuals Process	Alternative A Dewatering at Northwest Dalecarlia Processing Site and Disposal by Monofill	Alternatives B and E Dewatering at Northwest or East Dalecarlia WTP Location and Disposal by Trucking	Alternative C Thickening and Piping to Blue Plains AWWTP
Capital Costs			
Collection and Processing	\$47,600,000	\$47,600,000	\$47,600,000
Additional Facilities	\$6,700,000	\$0	\$95,000,000
Total Capital Cost (\$2005)			
Annual O&M Costs			
Labor (Thickening and Dewatering)	\$374,000	\$374,000	\$374,000
Labor (Monofill Operation)	\$69,000	\$0	\$0
Chemicals (Thickening and Dewatering)	\$238,000	\$238,000	\$238,000
Power	\$117,000	\$117,000	\$192,000
Other (Monofill-Specific Costs)	\$79,000	\$0	\$0
Other (Contract Hauling)	\$0	\$1,194,000	\$1,194,000
Total (Annual O&M Costs)			
Present Worth Costs			
Present Worth of Annual Costs	\$13,100,000	\$28,600,000	\$29,700,000
Salvage Value	\$0	\$0	\$0
Net Present Value	\$67,400,000	\$76,200,000	\$172,300,000

TABLE # 4-8

Assumptions for the Preliminary Net Present Value Calculations

Category	Assumptions
Residuals Production	
Production	32 dry tons/day @ 30% dry solids; 108 wet tons/day
Average Operating Period	16 hours/day; 5 days/week; 52 weeks/year
Chemicals	
Polymer Use	8 to 10 Lbs. active material per ton of dry solids
Polymer Cost	\$2.00 per pound of active material
Power	
Electrical Power Costs	\$0.045 to \$0.070 per kWh (\$0.06/kWh was used for the evaluation)
Labor Costs	
Burdened Operations Labor Costs	\$33.00 per hour
Burdened Managerial Labor Costs	\$47.00 per hour
Managerial to Operations Ratio	1 to 6 (for thickening and dewatering only)
Thickening and Dewatering Labor	2 people; 16 hours/day
Landfill Labor	1 person; 40 hours/week
Contract Hauling	
Contract Hauling	\$30.00 per wet ton
Net Present Value Calculations	
Discount Rate	3%
Present Worth Period	20 years
Salvage Value	None

Other Assumptions:

1. Maintenance costs for equipment and facilities are not included in the evaluation.
2. Annual costs for the monofill and costs for contract hauling are based on discussions with the Upper Occoquan Sewage Authority (Centreville, VA).
3. Costs for contract hauling will depend on the competitive environment and hauling distances.
4. Capital costs are not escalated to the mid-point of construction.
5. Cost calculations for assume that the capital and annual costs to thicken at the Dalecarlia WTP and dewater at Blue Plains are the same as an all-Dalecarlia WTP operation.

PART V. NEXT STEPS AND SCHEDULE

The Planning Board is expected to select its recommendations and forward them to the Washington Aqueduct no later than 5:00 p.m., June 6, 2005.

Attachments:

- # 1 - Executive Summary from DEIS
- # 2 - Project Area Map (In color, Planning Board only)
- # 3 - Map of Potential Truck Haul Routes (In color, Planning Board only)
- # 4 - May 11, 2005 Transportation Planning Memorandum
- # 5 - CD for Planning Board Packet Only

D:PB Briefing-Washington Aqueduct Residuals Management DEIS.doc
11 May 2005

Executive Summary

Purpose of the Document

The purpose of this Integrated Feasibility Study and Draft Environmental Impact Statement for Washington Aqueduct Water Treatment Residuals is to evaluate alternatives for managing its water treatment residuals for the next 20 years. This is necessary for the Washington Aqueduct to comply with its National Pollutant Discharge Elimination System (NPDES) NPDES Permit (Permit No. DC 0000019) within the Federal Facilities Compliance Agreement (FFCA) deadlines.

This Draft Environmental Impact Statement (DEIS) has been prepared in accordance with the National Environmental Policy Act (NEPA) and supporting regulations promulgated by the Council on Environmental Quality and the United States Army Corps of Engineers. Members of the public, regulatory agencies and other stakeholders are encouraged to review and comment on this draft document during the 45-day comment period following its publication. After this comment period has closed, a Final EIS (FEIS) will be prepared to address the comments received and to fully describe the environmental, social and economic consequences of implementing the preferred alternative and other feasible alternatives. The FEIS will be the evidentiary basis for the Record of Decision (ROD) developed by the Baltimore District of the Corps of Engineers that identifies the alternative to implement. During the public comment period, Washington Aqueduct will schedule, publicize and conduct a Public Hearing on this project.

Background and Project History

The Washington Aqueduct, a Division of the U.S. Army Corps of Engineers (USACE), Baltimore District, operates the Dalecarlia and McMillan Water Treatment Plants (WTPs) in Washington, DC, serving over 1 million persons in the DC and northern Virginia area with potable water. The treatment process removes solid particles (e.g., river silt) from the Potomac River supply water, treats and disinfects the water, and distributes the finished water to the metropolitan service area. The solids removed during the treatment process have historically been returned to the Potomac River, but the recently reissued version of the Washington Aqueduct's Permit No. DC 0000019 effectively precludes the discharge of water treatment solids (i.e., residuals) to the river.

Consequently, Washington Aqueduct has evaluated water treatment residuals management alternatives that minimize or eliminate the discharge of residuals to the river. Washington Aqueduct developed objectives for the proposed residuals management process with the intention of ensuring compliance with all permit and other legal mandates, and preserving or improving upon the safety, reliability, and efficiency of the current water treatment process. In addition, Washington Aqueduct incorporated into the objectives a concern for minimizing impacts to the human and natural environment.

The following objectives define the purpose and need for the proposed residuals management process assessment and were listed in the Notice of Intent, published in the *Federal Register* on January 12, 2004. (Measurement indicators in parentheses).

- To allow Washington Aqueduct to achieve complete compliance with NPDES Permit DC00000019 and all other federal and local regulations.
- To design a process that will not impact current or future production of safe drinking water reliably for the Washington Aqueduct customers. (Peak design flow of drinking water).
- To reduce, if possible, the quantities of solids generated by the water treatment process through optimized coagulation or other means. (Mass or volume of solids generated).
- To minimize, if possible impacts on various local and regional stakeholders and minimize impacts on the environment. (Traffic, noise, pollutants, etc.).
- To design a process that is cost-effective in design, implementation, and operation. (Capital, operations, and maintenance costs).

Proposed Action

The proposed action is to develop, design, and construct a permanent residuals management process that will cost-effectively collect, treat, and dispose of the water treatment residuals in conformance with the purpose and need stated in Section 1. The selected action must meet the

Federal Facilities Compliance Agreement (FFCA) compliance deadlines. It must also address the management of projected residuals quantities for a period of at least 20 years. Table 2-1 lists the current and future volume of water treatment and Forebay residuals generated daily as estimated for the Engineering Feasibility Study (EFS) (Volume 4 of DEIS). This table also presents the number of truck trips associated with the residuals quantities, based on a 5-day week. Not all of the alternatives evaluated in detail in this DEIS use trucking for final disposal of dewatered residuals. The larger residuals values listed in the design year columns reflect the larger quantity of water demand anticipated 20 years in the future.

TABLE 2-1
Washington Aqueduct Basis for Residuals Quantities

Residuals	Daily Generated Volume (Cubic Yards) ^a		Truck Trips/Day ^b			
			22 Cubic Yards/ Truck		11 Cubic Yards/ Truck	
	Current Average	Design Year Average	Current Average	Design Year Average	Current Average	Design Year Average
Water Treatment	94	120	7	8	13	16
Forebay	22	28	2	2	3	4

^a Based on 7 days per week production.

^b Based on hauling to a final disposal site 5 days per week.

Development of Alternatives

The first step in the National Environmental Policy Act (NEPA) alternative identification process was to review the project history and compile a full range of possible alternatives that had the potential to meet the stated purpose and need. Washington Aqueduct has been evaluating residuals management approaches for a number of years due to changes in or expected changes in regulations. During that time many alternatives have been identified. Some of these alternatives are no longer consistent with the regulatory requirements defined in the April 2003 National Pollutant Discharge Elimination System (NPDES) permit and associated FFCA.

A total of 160 residuals management alternatives and eight options were identified and screened to determine if they could be carried forward for detailed evaluation in the DEIS. Twenty-six of these alternatives were identified from a combination of historical documentation and ideas provided by the public during an initial Scoping period in early 2004. The remaining alternatives were identified during subsequent opportunities for public input in the third and fourth quarter of 2004 and the first quarter of 2005.

All of the alternatives have been incorporated into the list of alternatives detailed in Volume 4 of this DEIS, the Engineering Feasibility Study Compendium, and summarized in the Section 2 of this report. The original objectives as published in the Notice of Intent have remained in effect.

To facilitate the screening process and to make it easier for the reader to cross-reference this document with the other DEIS volumes, the residuals alternatives were grouped into one of the following categories before they were screened:

- No Action Alternative
- Alternatives that do not require continuous trucking from the Dalecarlia WTP
- Alternatives with a discharge to the Potomac River
- Alternatives involving alternate uses of the Dalecarlia Reservoir
- Alternatives with facilities at the McMillan Water Treatment Plant (WTP)
- Alternatives with facilities at the Dalecarlia WTP (involving trucking from Dalecarlia WTP Complex)

These categories recognize the similarity of many of the alternatives, grouping alternatives by common critical components, such as method of dewatering or disposal, or location of processing facilities. Once categorized, all residuals alternatives and options were evaluated using the same screening criteria. Volume 4 of this DEIS provides detailed technical information on each alternatives, as well as a complete description of the screening evaluation and results.

Alternatives Evaluated in Detail in the DEIS

The alternatives screening process concluded that five of the 160 screened alternatives were consistent with the purpose and need of the project, or required by NEPA to be evaluated in detail. All of these remaining alternatives, except the No Action alternative, have several common residuals collection and unthickened liquid residuals conveyance facilities. The common facilities include new residuals dredge collection, pumping, and conveyance

facilities located at the Georgetown Reservoir and new residuals collection equipment, pumping, and unthickened conveyance piping located at the Dalecarlia WTP sedimentation basins. The five processing and disposal alternatives along the potential common facilities, have been evaluated in more detail in this DEIS to determine their impacts. While none of the action alternatives avoid all conveyance of residuals by truck, they do represent a mix of methodologies that potentially reduce, expand or alter the location and impact of any trucking.

The five alternatives to be evaluated in detail were designated alternatives A through E following the completion of the extended screening process as follows:

Alternative A: Dewatering at Northwest Dalecarlia Processing Site and Disposal by Monofill

Alternative A does not require continuous trucking from the Dalecarlia WTP site. With this alternative, residuals would be collected continuously from the Dalecarlia Sedimentation Basins, periodically dredged from the Georgetown Reservoir and pumped to new residuals thickening and dewatering facilities located on the Dalecarlia WTP at a site in the northwestern corner of the property designated the Dalecarlia WTP Northwest site. Following dewatering, the residuals would be trucked across MacArthur Boulevard and disposed of in a new monofill constructed in the Dalecarlia Woods area of the Dalecarlia WTP complex.

Residuals processing, including gravity thickening and dewatering would occur at the Dalecarlia WTP Northwest site with this alternative. Following processing, onsite trucks would haul the residuals across MacArthur Boulevard and up Little Falls Road to the monofill disposal site. On average, six (20-ton) trucks worth of water treatment residuals would be hauled to the monofill site each day.

As currently conceived the residuals disposal monofill would be approximately 50 ft tall on the Dalecarlia Parkway side and 80 ft tall on the Dalecarlia Reservoir side. The footprint of the monofill is anticipated to occupy approximately 30 acres.

Alternative B: Dewatering at Northwest Dalecarlia Processing Site and Disposal by Trucking

For alternative B, residuals are collected from the Georgetown Reservoir and the Dalecarlia WTP sedimentation basins and conveyed to the Dalecarlia WTP similar to Alternative A. Once dewatered, residuals are contract hauled to a final disposal site.

Residuals processing, including gravity thickening and dewatering would occur at the Dalecarlia WTP Northwest site with this alternative. Following processing, the dewatered residuals would be contract hauled to a permitted offsite disposal facility. An estimated eight truck trips per day (5 days per week) of dewatered residuals are expected to be transported from the Dalecarlia WTP site on average. Higher numbers of truck trips, as defined in Volume 4 -Engineering Feasibility Study Compendium, would be required during peak residuals production periods.

Alternative C: Thickening and Piping to Blue Plains AWWTP

Alternative C does not rely upon trucks to transport dewatered residuals from the Dalecarlia WTP but it does require transporting by truck from Blue Plains AWWTP. Residual processing at the Dalecarlia WTP site is limited to gravity thickening with this

alternative. Thickened residuals are then pumped through a dedicated pair of pipelines to the Blue Plains Advanced Wastewater Treatment Plant (AWWTP) for dewatering. Residuals disposal is accomplished via contract hauling and off-site disposal. The proposed route for the dedicated thickened residuals pipeline follows the west bank of the Potomac River to the Blue Plains AWWTP.

Alternative D: No Action Alternative

Although not consistent with the purpose and need of the project, Alternative D, the No Action Alternative, is retained as a NEPA requirement. This alternative assumes that residuals would continue to be discharged directly from the Dalecarlia WTP sedimentation basins and the Georgetown Reservoir to the Potomac River in the future. This practice would be in violation of the strict solids concentrations defined in the NPDES permit discharge limits.

Alternative E: Dewatering at East Dalecarlia Processing Site and Disposal by Trucking

This alternative is similar to Alternative B, except residuals processing is accomplished at a site on the eastern portion of the Dalecarlia WTP (and Reservoir) property designated as the East Dalecarlia Processing site. Following processing, the dewatered residuals would be contract hauled to a permitted offsite disposal facility. An estimated eight truck trips per day (5 days per week) of dewatered residuals are expected to be transported from the Dalecarlia WTP site on average. Higher numbers of truck trips, as defined in Volume 4—Engineering Feasibility Study Compendium, would be required during peak residuals production periods.

Evaluation of Impacts

The potential for and significance of environmental, social, and economic consequences associated with implementing any of the project alternatives is described in this DEIS. The specific resource areas evaluated are:

- Land use
- Air quality
- Aquatic resources
- Biological resources
- Cultural resources
- Hazardous, toxic, and radioactive substances
- Implementation uncertainty
- Soils, geology, and groundwater
- Infrastructure
- Land application
- Public health
- Transportation
- Visual resources
- Social and economic resources, including Environmental Justice and Protection of Children

Criteria for evaluating potential impacts and determining their significance were determined by the CEQ (40 CFR 1508.27). The regulations state that significance is determined by the intensity or severity of the impact and the context in which it occurs. Intensity criteria were based on the following:

- The degree to which the action affects public health or safety
- The degree of change to unique geographic characteristics, such as visual quality, prime agricultural land, archaeological sites, wetlands, or ecologically critical areas
- Potential for environmental or scientific controversy
- Known or unknown level of risk
- Potential for establishing a precedent for future actions or representing a decision in principle about a future consideration
- The relation of impact to other actions, individually insignificant but with cumulative impact
- The proximity of the action to resources that are legally protected by various statutes, such as wetlands, historic properties listed in the National Register of Historic Places, regulatory floodplains, and federally listed threatened or endangered species
- The potential for violating federal, state, or local laws or requirements in place to protect the environment

Using these criteria, the following levels of impacts were identified:

No Impact—implementation of the action has little or no effect upon the resource.

No Significant Impact—implementation of the action has an impact, either adverse or beneficial, but it does not meet the significance criteria for the given resource relative to intensity and context.

Significant Impact—the predicted impact, either adverse or beneficial, meets the significance criteria for the given resource. Significant impacts may be reduced to an insignificant level by implementing appropriate mitigation measures.

The cumulative impacts that could be associated with the implementation of the proposed action in concert with one or more other past, present, or reasonably foreseeable future actions or projects are also evaluated. Specifically, this evaluation is prepared in accordance with the requirements of the National Environmental Policy Act (NEPA) and guidance from the CEQ, *Considering Cumulative Effects Under the National Environmental Policy Act*.

Selection of the Preferred Alternative

Each of the alternatives evaluated (with the exception of the No Action Alternative) necessitates developing infrastructure in an urban setting, characterized by important natural and man-made resources. All five of the alternatives (including the No Action Alternative) evaluated to meet this federally mandated action will carry some degree of impact. Of particular concern is the ability of an alternative to meet the project's purpose

and need, while minimizing impacts to the communities surrounding the potential operations, no matter where they be located. Particular emphasis was naturally placed in evaluating impacts near the Dalecarlia Reservoir, Dalecarlia Water Treatment Plant (WTP), Georgetown Reservoir, and Blue Plains AWWTP facilities, as well as intermediate conveyance areas potentially impacted by Alternative C, the pipeline alternative. The Preferred Alternative for the DEIS should be the alternative that best meets the objectives of the project, as stated in the Notice of Intent (published in the *Federal Register* on January 12, 2004).

The following sources of information were considered by Washington Aqueduct while selecting the proposed action from the five possible residuals alternatives:

- Information on the potential impacts revealed by the technical evaluation (detailed in Sections 3 and 4 of this DEIS),
- Ideas and concerns raised by the public during five open public meetings or submitted directly to Washington Aqueduct staff, and
- Consultations with regulatory authorities at the federal, state, and local levels (detailed in Section 4).

Both Alternatives A (Dewatering and Disposal by Monofill) and C (Thickening and Piping to Blue Plains AWWTP) have beneficial elements that contribute to the objectives of the Clean Water Act and NEPA, by enabling the Washington Aqueduct to stop discharging residuals into the Potomac River, and prevent residuals-bearing trucks from traveling on local community roads nearest to the Dalecarlia WTP facilities. However, implementation of Alternatives A and C would not allow Washington Aqueduct to comply with the Federal Facility Compliance Agreement schedule issued by the U.S. Environmental Protection Agency (USEPA), and they both would have significant long-term adverse impacts on various natural and community resources.

More specifically, during the course of this NEPA process, we have learned that the development of Alternative A is not consistent with the schedule for investigations of this site by the U.S. Army Corps of Engineers for its ongoing remediation efforts for the American University Experimental Station (AUES) Formerly Used Defense Site (FUDS) project. Further, Alternative C, like the other piping alternatives examined during the screening process, is not consistent with the District of Columbia Water and Sewer Authority's (DC WASA's) long-term plans for its Blue Plains AWWTP and is more than double the cost of each of the other alternatives. Both alternatives would have unacceptably large potential visual, cultural, forest habitat, and perhaps recreational, impacts.

Alternative D, the no-action alternative, cannot be selected by the Washington Aqueduct because it would place it in violation of the Federal Clean Water Act, the terms of their NPDES permit, and the FFCA issued by USEPA. Throughout the DEIS preparation process, USEPA has confirmed that they would be unwilling to modify the NPDES permit to allow the Washington Aqueduct to return to a residuals disposal practice consistent with the No Action alternative, despite the Washington Aqueduct's consideration of it and a number of similar river discharge alternatives during this process.

The Washington Aqueduct selected between Alternatives B and E for the proposed action. Both alternatives can be implemented within the required timeframe with a much greater degree of certainty than is possible for either Alternative A or C. The costs of these alternatives are consistent with the project budget, which is wholly dependent for financial support from the three local wholesale customers and the rate-paying public. Both alternatives, as did the other action ones, feature residuals processing with trucking, albeit to off-site disposal locations. They differ in the location of the processing facilities and the location in which the trucks enter the local roadways. Alternative B would construct the residuals processing facility at the Northwest Dalecarlia WTP location and the trucks would enter the local roadways at the existing facility entrance to MacArthur Boulevard. Alternative E would construct the residuals processing facilities at the East Dalecarlia WTP location and trucks would enter the local roadways at the existing intersection of Little Falls Road and Dalecarlia Parkway. These differences form the basis of the tradeoffs between each alternative.

Alternatives B and E present equally feasible options, from an engineering perspective, for a residuals management program that eliminates residuals discharge to the Potomac River. Each would enable the Aqueduct to meet the conditions of the recent Permit No. DC 0000019 within the schedule put forth in its Federal Facilities Compliance Agreement with the USEPA. Alternative E offers advantages in the following areas:

- Less visual impact to surrounding residential neighbors
- Site topography allows impacts to be minimized
- Less truck noise attributable to residuals trucks travelling on Loughboro Road
- Greater distance between surrounding neighborhoods and proposed residuals processing facilities
- Fewer apparent soils issues

Therefore, Alternative E—Dewatering at East Dalecarlia Processing Site and Disposal by Trucking is recommended as the Proposed Action for the DEIS.

Agency and Public Participation

During the preparation of the DEIS, a public scoping period was held in early 2004. Also in 2004, four (4) additional public forums were hosted by the Washington Aqueduct to provide interested members of the public with an opportunity to better understand the project and the proposed alternatives. The Washington Aqueduct also consulted with numerous local and federal agencies and elected officials as well as participated by invitation in a variety of forums hosted by community groups to continue to describe the project and the alternatives being evaluated in the DEIS. The Aqueduct created and maintained a public web site devoted exclusively to this project.

Members of the public, elected officials, and regulatory agencies in the District of Columbia and Maryland used the public involvement process leading up to the publication of the DEIS to voice concerns, ideas and opinions about the project and its proposed alternatives.

A summary of major public concern on DEIS alternatives A through E communicated during this process is as follows:

Alternative A—Dewatering at Northwest Dalecarlia Processing Site and Disposal by Monofill

There was significant public concern about removing a 30-acre stand of mature, mixed hardwood forest and replacing it with a residuals monofill with a 20 year life span. Specific issues centered on the visual impact to nearby Maryland residences, operational impacts of light, noise and dust, the loss of biological resources that are currently protected from human activity, and the potential for the water quality in the reservoir to be affected. Some area residents characterized this alternative as creating a permanent impact (clearcutting the forest) for a temporary solution (a monofill with capacity for 20 years of disposal).

From an agency standpoint, the Corps of Engineers Baltimore Division leading the AUES FUDS environmental restoration project expressed concern that portions of the Dalecarlia Reservoir property, including the monofill footprint, fell within an area historically known as "Government Woods". They have reasonable suspicion that this property may have been associated with the AUES's World War One era research and testing activities. This suspicion has led to scheduled testing of portions of the Dalecarlia Reservoir property. This scheduled testing in 2008 and associated remedial actions, if any conflict with the Aqueduct's timetable for FFCA compliance.

Alternative B—Dewatering at Northwest Dalecarlia Processing Site and Disposal by Trucking

Public concern developed focused on the appearance of the processing facilities. Specifically its potential to impact the visual character of the immediate area and to be seen by residents of Maryland's Brookmont neighborhood downgradient of the site's western boundary, residents of Windward and Leeward Place overlooking the site's northern boundary, and users of the portion of the Capital Crescent Trail passing through the Aqueduct's WTP property. Nearby residents have also voiced concern about operational issues of noise, light pollution, and the potential for odors.

Beyond the immediate neighbors, this alternative attracts public concern about truck traffic on area roads, which is viewed as a congestion, pedestrian safety, and residential foundation hazard. Regulatory agencies have not voiced concerns specific to this alternative.

Alternative C—Thickening and Piping to Blue Plains AWWTP

Maryland and DC residents from the neighborhoods surrounding the Dalecarlia Reservoir and WTP have been largely supportive of this alternative because it involves the smallest amount of visibly-observed facility development in this geographic area and does not involve trucks carrying residuals on their area roads, which effort would instead be transferred to I-295 and Southeast D.C. Under this alternative, the potential operational impacts of the residuals processing facility would be transferred to the Blue Plains AWWTP approximately 12 miles away in the opposite corner of the District of Columbia.

Three regional offices of the NPS have expressed significant concern about the pipeline corridor as it passes through the C&O National Historical Park and Georgetown Historic District, and areas adjacent to the Lincoln Memorial, the Franklin Delano Roosevelt Memorial, and Thomas Jefferson Memorial.

The Washington Area Sanitation Authority (DC WASA) evaluated the prospect of hosting the residuals processing facility at their Blue Plains facility. They have determined that all potentially available site space must be reserved for planned facilities to accomplish greater wastewater nutrient removal and store and treat CSOs (see Engineering Feasibility Study Compendium—Volume 4 of the DEIS for more detail on this issue). As a result, they cannot host the Washington Aqueduct's facilities as part of this alternative.

Alternative D—No Action Alternative

A portion of the public dialog has focused on the need for the Washington Aqueduct to change its current and historical practice of Potomac River residuals disposal. There has been some public support for this alternative, with the argument that a new residuals management process creates a set of land-based impacts that are greater than the impacts associated with water-based disposal. Neither the impact balancing that occurred during this NEPA process, nor the strictures of the Clean Water Act support this argument.

From a resource agency perspective, the Washington Aqueduct received the current Permit No. DC 0000019, and entered into an FFCA following 9 years of research and detailed discussion over the need to alter the residual disposal process from river discharge to land application. An extensive administrative record was created by USEPA Region 3 to support this decision. Once made, the FFCA was needed to set forth a timetable for the Washington Aqueduct to meet Permit No. DC 0000019. This permit for all practical purposes precludes continuation of river disposal. The failure to enter into the FFCA would have most likely resulted in USEPA revoking Permit No. DC 0000019, or USEPA entering a unilateral order and schedule.

Alternative E—Dewatering at East Dalecarlia Processing Site and Disposal by Trucking

This alternative is an outcome of the extended public comment period ending in mid-November 2004. It has the benefit of moving the facility further from the Brookmont neighborhood and will have better access to the Dalecarlia Parkway, reducing the local noise from the expected truck traffic. The building would be visible from the Westmoreland neighborhood that faces the reservoir, but it would be in the same sight line as the existing hospital high rise buildings. The topography of the site offers opportunities to minimize the visibility of the structures.

Conclusion

The alternatives screening criteria are linked to the project's purpose and need. Washington Aqueduct developed them subsequent to the issuance of the Notice of Intent.

The production of safe drinking water delivered with one hundred percent reliability to Washington Aqueduct's wholesale customers at a reasonable cost must be maintained during construction and operation of the selected alternative. This is the inherent duty of the Washington Aqueduct management.

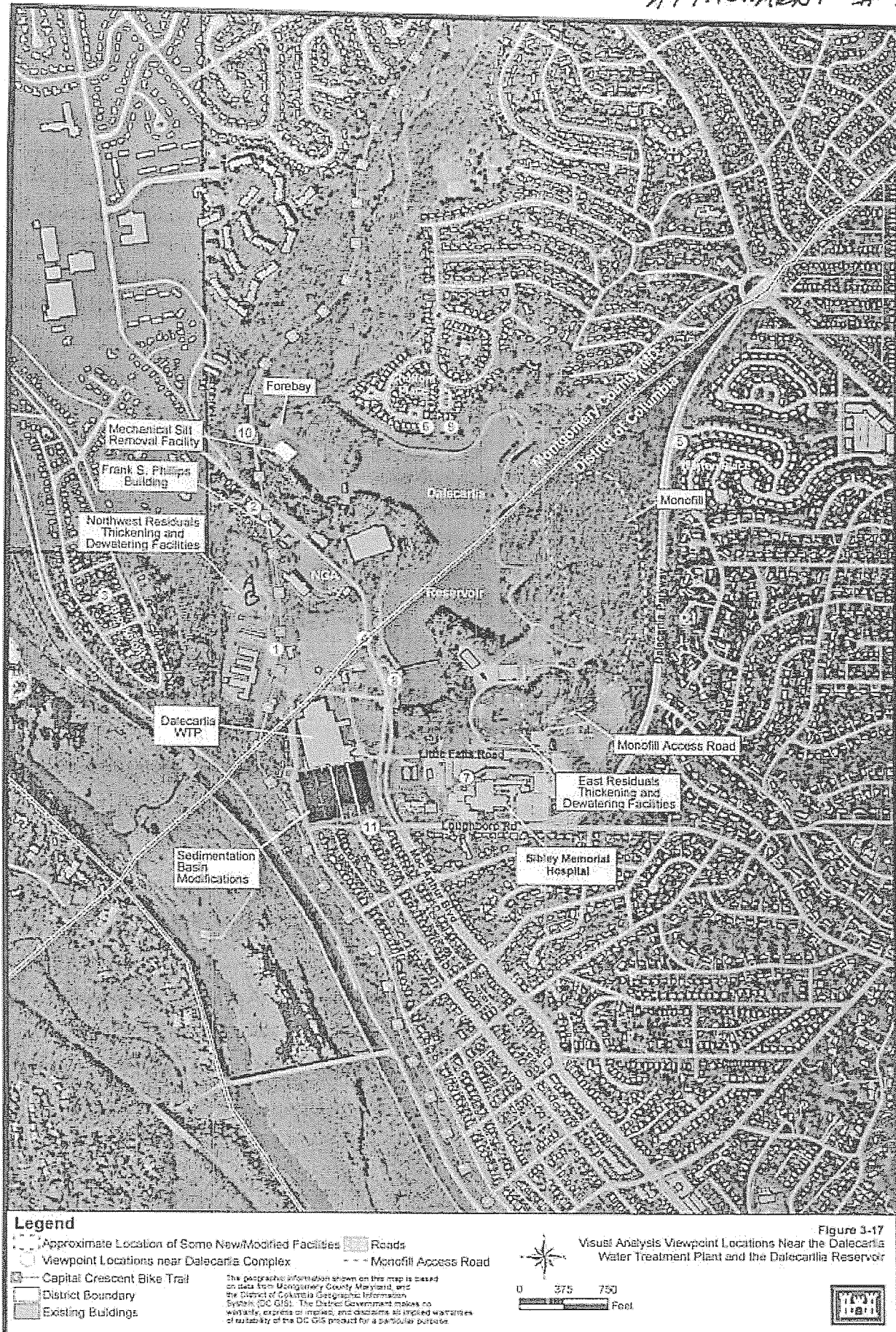
The screening criteria were then applied to all of the alternatives — those that were initially developed by Washington Aqueduct staff and consultants and those that were suggested by

the public. Four alternatives met the screening criteria and their effects are evaluated in this DEIS.

A fifth alternative, the "no action" alternative is also included.

While "no action" is an alternative that must be evaluated in any environmental documentation accomplished under the National Environmental Policy Act, it cannot be the selected action in this case. The issuance of NPDES Permit DC 0000019 which itself was evaluated in a public process pursuant to EPA regulations, requires some kind of solids collection and disposal process as an alternate to the current method of flushing them to the Potomac River.

Alternative E—Dewatering at East Dalecarlia Processing Site and Disposal by Trucking is recommended as the Proposed Action for the DEIS because it best meets the purpose and need of the project.



ATTACHMENT #3

ATTACHMENT #3

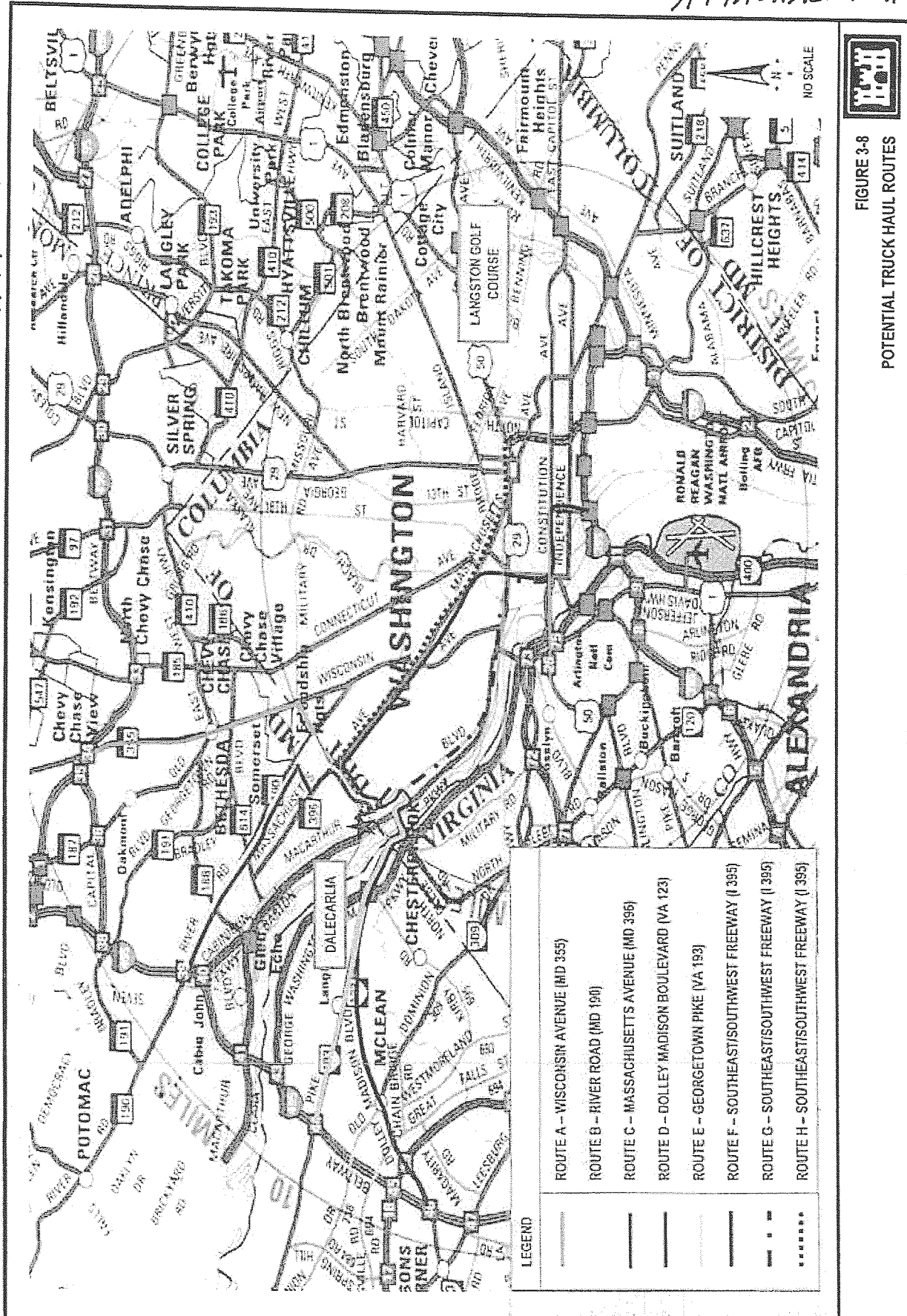
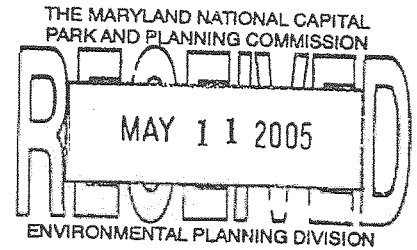


FIGURE 3-8
POTENTIAL TRUCK HAUL ROUTES

ATTACHMENT # 4



THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION
Montgomery County Department of Park and Planning



May 11, 2005

MEMORANDUM

TO: Jorge Valladares, Chief
Environmental Planning

FROM: Daniel K. Hardy, Supervisor *DKH*
Transportation Planning

SUBJECT: Mandatory Referral No. 05002-DA-1
Washington Aqueduct Proposed Water Treatment Residuals Management Process
Bethesda/Chevy Chase Policy Area

This memorandum is Transportation Planning staff's review of the Draft Environmental Impact Statement (DEIS) prepared by the U.S. Army Corps of Engineers for the referenced action.

RECOMMENDATION

Transportation Planning recommends transmittal of the following comments:

1. Multiple haul routes should be established and selected on a trip-by-trip basis depending upon the destination to minimize total truck travel. Trucks should only use haul routes in Montgomery County for travel to destinations either in Montgomery County or other Maryland jurisdictions north of Montgomery County.
2. Haul Route "C" is not recommended as a suitable route because the portion of Little Falls Parkway incorporated in the haul route has a posted restriction prohibiting commercial vehicle use.
3. Either Haul Route "A" or Haul Route "B" would be acceptable for trips traveling into Montgomery County.
4. Truck trips should be concentrated during off-peak travel times during weekdays between 9:30 AM and 4:00 PM.

DISCUSSION

The proposed action is expected to generate up to 40 truck trips per day (20 trips in each direction), far less than the 30 vehicle trips per hour threshold for a Local Area Transportation Review study. The DEIS indicates that most truck trips will occur during midday hours on weekdays, so that peak period traffic operations and congestion levels will not be materially affected.

The Dalecarlia Water Treatment Plant (WTP) is located on MacArthur Boulevard in northwest Washington, DC, adjacent to and partially within Montgomery County. Under the proposed action, residual materials will be transferred by truck to a variety of receiving sites, currently unspecified, that are generally accessible via the regional interstate highway system. Vehicular transfer of residual materials by any route will necessarily include some travel on arterial roadways serving sensitive residential, commercial, or institutional communities that lie between the Dalecarlia WTP and the interstate highway system. The DEIS therefore identifies eight potential truck haul routes that would connect the Dalecarlia WTP to the interstate highway system, notably the Capital Beltway (I-495) in Virginia and Maryland and the Southeast/Southwest Freeway (I-395) in Washington, DC.

The eight routes can be characterized in three groups, organized geographically as follows:

- Routes A, B, and C extend in a northwesterly direction toward the Capital Beltway in Montgomery County.
- Routes D, and E extend in a westerly direction toward the Capital Beltway in Fairfax County, Virginia.
- Routes F, G, and H extend in a southeasterly direction toward the Southeast/Southwest Freeway in Washington, DC.

Each of the route require travel on six to eight miles of local arterial roadway, so no one route or set of routes is clearly advantageous for all possible destinations. Staff finds that at least three haul routes should be established with one route selected from each of the three geographic groups described above. For each trip, the haul route chosen should be one that minimizes total travel distance to the destination. For destinations in Montgomery County, or Maryland jurisdictions north of Montgomery County, Haul Routes A and B would be suitable.

Staff finds that Haul Route C should not be recommended as a suitable route because it incorporates a portion of Little Falls Parkway between Massachusetts Avenue (MD 396) and River Road (MD 190) on which commercial vehicles are prohibited.

In Montgomery County, Haul Routes A and B consist of those portions of Wisconsin Avenue (MD 355) and River Road (MD 190) respectively, between the Capital Beltway and the District of Columbia. Staff finds that Haul Routes A and B are very similar in sharing the following characteristics:

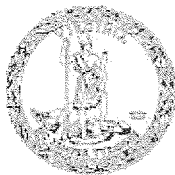
- Approximately four miles in length between the Capital Beltway and the Washington DC boundary.
- Classified as multilane, divided, Major Highways in the County's Master Plan of Highways
- No prohibitions on truck traffic.
- Carry approximately 60,000 vehicles per day in the vicinity of the Capital Beltway.
- Congestion levels prompted the Planning Board to seek initiation of State Highway Administration Development and Evaluation studies based on the July 2004 Annual Development Approval and Congestion Report.

The differences between Wisconsin Avenue and River Road are primarily related to adjacent land uses, which have sensitivity to truck traffic for different reasons. Wisconsin Avenue serves the pedestrian-oriented central business districts of Friendship Heights and Bethesda. Based in part on the pedestrian activity, posted speed limits range from 25 MPH to 35 MPH. River Road serves lower density communities in the Bethesda-Chevy Chase planning area and is generally lined with residential and institutional uses, except the Westbard Sector Plan area. Posted speed limits range from 35 MPH to 45 MPH.

Staff finds that neither the pedestrian-oriented developments along Wisconsin Avenue nor the low-density residential communities along River Road to be clearly superior or inferior in determining the appropriateness of a haul route. Both routes carry in excess of 2,000 trucks per day near the Capital Beltway, so the effect of truck traffic anticipated by the proposed action (up to 40 vehicles per day on all haul routes combined) is not expected to be observable on either route. Staff therefore finds that either Haul Route A (Wisconsin Avenue) or Haul Route B (River Road) would be an appropriate designation.

Staff does not concur with the DEIS finding that Wisconsin Avenue and River Road operate at acceptable levels of service based on Maryland-National Capital Park and Planning Commission standards. As described above, substandard congestion levels exist during peak periods along both candidate routes as identified in the July 2004 Annual Development and Congestion Report. Staff therefore recommends that the truck trips be scheduled to occur after the end of the morning peak period and before the beginning of the evening peak period. Based on the peak period definitions in the Planning Board's Local Area Transportation Review Guidelines, the truck travel should be scheduled to occur between 9:30 AM and 4:00 PM.

DKH:gw



COMMONWEALTH of VIRGINIA

Department of Historic Resources

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

2801 Kensington Avenue, Richmond, Virginia 23221

Kathleen S. Kilpatrick
Director

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May 26, 2005

Mr. Thomas P. Jacobus
Washington Aqueduct
US Army Corps of Engineers—Baltimore District
5800 MacArthur Boulevard, NW
Washington, DC 20016-2514

Re: Water Treatment Residuals Management Process for the Washington Aqueduct
Fairfax and Arlington Counties
DEQ Project No. 05-122F
VDHR File No. 2004-1374

Dear Mr. Silva:

Through the Virginia Department of Environmental Quality we have received a draft Environmental Impact Statement for the proposed Water Treatment Residuals Management Process for the Washington Aqueduct.

We want to remind you that the Army Corps of Engineers, as a federal agency, must consider the effects of its actions on historic properties listed in or eligible for the National Register of Historic Places and provide the Advisory Council on Historic Preservation the opportunity to comment in accordance with Sections 106 of the National Historic Preservation Act, as amended, and its implementing regulation 36 CFR 800. The Section 106 review process begins when the federal agency provides a description of the undertaking and its Area of Potential Effect (APE) to the State Historic Preservation Officer (SHPO), which in Virginia is the Department of Historic Resources (DHR). For this reason we request that you consult with us directly on this undertaking. While 36 CFR 800.8 allows federal agencies to coordinate Section 106 compliance with the National Environmental Policy Act (NEPA), the agency must inform the applicable SHPO early in the process that it intends to do so. The agency must also take care that the environmental documentation prepared under NEPA does present information about historic properties and potential effects to such resources at a level of detail that allows the SHPO and other consulting parties to comment.

We look forward to working with you on this project. If you have any questions concerning our comments, please contact me at (804) 367-2323, ext. 114.

Sincerely,

Marc Holma, Architectural Historian
Office of Review and Compliance

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Cc: Mr. Charles H. Ellis, III, Department of Environmental Quality



COMMONWEALTH of VIRGINIA

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

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Robert G. Burnley
Director

(804) 698-4000
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June 2, 2005

Mr. Thomas P. Jacobus
General Manager
Washington Aqueduct
U.S. Army Corps of Engineers, Baltimore District
5900 MacArthur Boulevard, N.W.
Washington, D.C. 20016-2514

RE: Draft Environmental Impact Statement for a Proposed Water Treatment
Residuals Management Process for the Washington Aqueduct,
Washington, D.C.
DEQ-05-122F

Dear Mr. Jacobus:

The Commonwealth of Virginia has completed its review of the above-listed Draft Environmental Impact Statement ("Draft EIS"). The Department of Environmental Quality is responsible for coordinating Virginia's review of federal environmental documents and responding to appropriate federal officials on behalf of the Commonwealth. The following state agencies, regional planning district commission, and localities joined in this review:

Department of Environmental Quality
Department of Game and Inland Fisheries
Department of Agriculture and Consumer Services
Department of Conservation and Recreation
Department of Health
Department of Transportation
Department of Historic Resources
Department of Mines, Minerals, and Energy
Department of Forestry
Northern Virginia Regional Commission
Arlington County
Fairfax County.

Project Description

The Washington Aqueduct, a unit of the Baltimore District, Army Corps of Engineers, serves water supply customers in the District of Columbia and Northern Virginia from the Dalecarlia and McMillan Water Treatment Plants in the District (Draft EIS, page ES-1). Pursuant to a federal facilities compliance agreement with the U.S. Environmental Protection Agency and in keeping with NPDES permit requirements for concentrations of solids, the Washington Aqueduct proposes to change its current practice of discharging water treatment residual solids to the Potomac River. The Draft EIS considers five alternative courses of action:

- Alternative A - De-watering at the Northwest Dalecarlia Processing site and disposal by monofill. This alternative would involve dredging and pumping of material, de-watering, and final placement by trucking to a new disposal area in the water treatment plant complex (Draft EIS, page 2-6, section 2.5.2).
- Alternative B - Same as Alternative A, but trucking by contract to an off-site disposal area (pages 2-6 and 2-7, section 2.5.3).
- Alternative C - Thickening, sending by pipeline to the Blue Plains Advanced Wastewater Treatment Plant, and contract hauling to off-site disposal areas (page 2-7, section 2.5.4).
- Alternative D - "No-action alternative" (page 2-7, section 2.5.5).

Alternative E - De-watering at the East Dalecarlia Processing Site and disposal by contract trucking to an off-site disposal area (page 2-8, section 2.5.6).

The Washington Aqueduct indicates its preference for Alternative E, for reasons of environmental impact, scheduling of implementation, and cost (Draft EIS, pages ES-6 through ES-8).

In addition, the Draft EIS considers eight (8) transport routes for the contract trucking contemplated in Alternatives A, B, C, and E above (pages 3-48 and 3-49). Two of these routes pertain to Virginia, as follows (page 3-48):

- Route D would have trucks travel Chain Bridge to Chain Bridge Road (state route 123) and continue on that route (Dolley Madison Boulevard) to the Dulles Access/Toll Route and thence to the Beltway (Interstate 495).

- Route E would have trucks travel over Chain Bridge to Chain Bridge Road (state route 123) and Old Georgetown Road (state route 193) to the Dulles Access/Toll Route and thence to the Beltway (Interstate 495).

The Draft EIS does not appear to indicate or analyze proposed or alternative permitted disposal sites to which the residual solids would be trucked. As DEQ's Northern Virginia Regional Office states, if a disposal site in Virginia is selected, further review by DEQ would be necessary to ensure compliance with all environmental laws and regulations.

Environmental Impacts and Mitigation

1. Natural Heritage Resources. The Department of Conservation and Recreation (DCR) has searched its Biotics Data System for occurrences of natural heritage resources in the Virginia areas mapped in the Draft EIS. "Natural heritage resources" are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations. According to DCR, natural heritage resources have been documented in project areas, but DCR does not anticipate that the project would adversely affect natural heritage resources because of the scope of project activities and the distance to the resources.

Under a memorandum of agreement between DCR and the Department of Agriculture and Consumer Services (VDACS), DCR represents VDACS in comments on project impacts on endangered plant and insect species. According to DCR, the project will not affect any such species. VDACS confirms this determination.

2. Wildlife Resources. The Department of Game and Inland Fisheries does not anticipate any adverse impacts upon Virginia wildlife resources from this project.

3. Natural Area Preserves. According to the Department of Conservation and Recreation, there are no state Natural Area Preserves under its jurisdiction in the vicinity of project activities.

4. Air Quality. According to DEQ's Division of Air Program Coordination, the project area is an ozone non-attainment area. Accordingly, the Washington Aqueduct should take all precautions necessary to restrict emissions of volatile organic compounds (VOCs) and oxides of nitrogen (NO_x) in carrying out this project.

(a) Alternatives Analysis. DEQ's Division of Air Program Coordination indicates that either Alternative A, involving disposal of residuals to a monofill on the Dalecarlia water treatment plant site, or Alternative C, involving piping of the material to the Blue

Plains advanced wastewater treatment plant, would eliminate perennial use of trucks, conserving oil and reducing air pollution compared with the preferred alternative.

(b) *Open Burning.* If project activities include the any open burning in Virginia, this activity must meet the requirements of the Regulations for the Control and Abatement of Air Pollution for open burning (9 VAC 5-40-5600 *et seq.*), and it may require a permit (see “Regulatory and Coordination Needs,” item 1, below). The Regulations provide for, but do not require, the local adoption of a model ordinance concerning open burning. The Washington Aqueduct should contact appropriate local officials to determine what local requirements, if any, exist. The model ordinance includes, but is not limited to, the following provisions:

- All reasonable effort shall be made to minimize the amount of material burned, with the number and size of the debris piles;
- The material to be burned shall consist of brush, stumps and similar debris waste and clean burning demolition material;
- The burning shall be at least 500 feet from any occupied building unless the occupants have given prior permission, other than a building located on the property on which the burning is conducted;
- The burning shall be conducted at the greatest distance practicable from highways and air fields;
- The burning shall be attended at all times and conducted to ensure the best possible combustion with a minimum of smoke being produced;
- The burning shall not be allowed to smolder beyond the minimum period of time necessary for the destruction of the materials; and
The burning shall be conducted only when the prevailing winds are away from any city, town or built-up area.

(c) *Fugitive Dust Control.* Fugitive dust from project activities, such as disposal of solids in a permitted site in Virginia, must be kept to a minimum by using control methods outlined in 9 VAC 5-50-60 *et seq.* of the Regulations cited above. These precautions include, but are not limited to, the following:

- Use, where possible, of water or chemicals for dust control;
- Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials;
- Covering of open equipment for conveying materials; and
- Prompt removal of spilled or tracked dirt or other materials from paved streets and removal of dried sediments resulting from soil erosion.

5. *Historic Structures and Archaeological Resources.* The Washington Aqueduct must consider the effects of its actions on historic properties listed in or eligible for the

National Register of Historic Places and provide the Advisory Council on Historic Preservation the opportunity to comment in accordance with section 106 of the National Historic Preservation Act and its implementing regulations at 36 CFR Part 800. See "Regulatory and Coordination Needs," item 2, below.

6. Forest Resources. According to the Department of Forestry, the project will not significantly affect Virginia's forest resources.

7. Mineral Resources. According to the Department of Mines, Minerals, and Energy, the project will not affect Virginia's mineral resources or geology.

8. Transportation.

(a) Impacts on Road Projects. According to the Virginia Department of Transportation (VDOT), the preferred alternative will not significantly affect any planned road projects. VDOT plans widening of state route 123 between the Dulles Toll Road ramps and Great Falls Street (state route 694) from four lanes to six; this is a linear distance of a few hundred feet. State route 193 (Old Georgetown Pike), a Virginia Byway or scenic route that is two lanes wide, is under consideration for traffic calming measures because of its geometry and concerns regarding through traffic by its adjoining residents.

Additional evaluation of project impacts on local roads must await identification of other roads that may be involved in the trucking of solids. For example, there is no indication of routes that would be used once the trucks have traveled the Beltway, perhaps because the Draft EIS does not indicate potential disposal sites.

(b) Alternative Routes. VDOT recommends that the Washington Aqueduct consider obtaining permission from the National Park Service to use the George Washington Memorial Parkway as a route to reach the Beltway from Chain Bridge. If allowed, this alternative would eliminate impacts of truck traffic on residential areas, delays at traffic lights and intersections along Route 123 or 193, and hazards to pedestrians along these routes.

(c) Route 193. The Draft EIS fails to mention the presence of Cooper Middle School near Route 193 and the Beltway. The school has an entrance on Balls Hill Road (state route 686), which is very close to the Route 193 interchange with the Beltway. There is likely to be morning and afternoon traffic congestion in the vicinity of the school.

(d) Hauling Hours. The Draft EIS has a discrepancy in regard to the hauling hours for trucked residuals from the water treatment plant. In Chapter 3 (Existing

Conditions), the document states that hauling would take place between 6 AM and 4 PM on weekdays, with a concentration between 9 AM and 3 PM (page 3-48, section 3.10.5). In Chapter 4 (Impacts Evaluation), the document states that hauling would take place on weekdays between 7 AM and 7 PM (page 4-54, section 4.11.3.2)

(e) Disposal Sites. As indicated above, disposal sites are not identified in the Draft EIS. The document mentions two Fairfax County Water Authority treatment plants (in Occoquan and in Herndon) to show current practice, but indicates a need for identification of additional end users before all the residuals could be assimilated into the market (Draft EIS, page 4-98, section 4.16.3.2, "Availability of Suitable Resources" heading).

9. Local and Regional Concerns. The Northern Virginia Regional Commission had no comment. The same is true for Fairfax County.

Arlington County, through its Utilities and Environmental Policy Division, indicated its agreement with Alternative E as the preferred alternative on environmental grounds and states that it offers potential environmental benefits in using the residual solids.

(a) Life Cycle Cost Analysis. Arlington County recommends that a 20-year lowest life cycle cost analysis be performed to determine the most appropriate equipment and the best choice of materials for the construction of wetted materials. Arlington's experience with a major upgrade of its Water Pollution Control Plant indicates that selection of materials and equipment on this basis substantially reduces long-term facility costs, minimizes down time, and provides better reliability.

Arlington County also recommends on-site tests be performed on all equipment, including de-watering equipment, under controlled conditions. This would verify performance and allow a valid net 20-year lowest life cycle cost analysis to be performed. Site visits to other facilities using the proposed equipment are recommended as well.

Arlington recommends that the assumptions stated in the Draft EIS relative to chemicals, labor, and contract hauling costs (page 4-83, Table 4-8) be verified. Based on the County's experience, these figures appear somewhat low.

(b) Redundancy Levels. Arlington County agrees with the redundancy levels proposed in the Draft EIS to accommodate anticipated residual loading at the facility:

Gravity thickeners - one unit out of a total of four units;

- Centrifuges, if selected - two units out of a total of six units;

- Transmission lines for conveying the residuals from remote locations -- two lines, each sized to convey 100% of the normal loading.

(c) *Little Falls Road.* Arlington recommends that Little Falls Road be analyzed to determine whether it has the structural capability to handle truck traffic modifications that are required to support the preferred alternative, and to determine whether there are any additional costs for improvements.

(d) *Commendations.* Arlington County notes the significant financial and operational impacts of the decision to discontinue the historic practice of discharging water treatment residuals to the Potomac River. In this light, the County commends the Washington Aqueduct for the open and inclusive process that has been followed throughout the development of the Draft EIS. The recommended option, Alternative E, appears best to the County on environmental and economic grounds, although there may still be concerns about neighborhood impacts of the proposed trucking operation. The approach taken by the Washington Aqueduct has been thorough and professional.

Regulatory and Coordination Needs

1. *Air Quality Regulation.* As indicated above ("Environmental Impacts and Mitigation," item 4(b)), any open burning in Virginia may require open burning permits from DEQ. For guidance on applicability of the requirement and permit processing, the Washington Aqueduct should contact DEQ's Northern Virginia Regional Office (Mr. Terry Darton, telephone (703) 583-3845).

2. *Historic Resources Consultation.* To ensure compliance with section 106 of the National Historic Preservation Act, the Washington Aqueduct should provide a description of the undertaking and its Area of Potential Effect to the State Historic Preservation Office (SHPO), which in Virginia is the Department of Historic Resources (DHR). While federal agencies may coordinate section 106 compliance activities with those for the National Environmental Policy Act (see 36 CFR section 800.8), the agency must inform the appropriate SHPO early in the process, and ensure that the NEPA documentation includes sufficient information about historic properties and project impacts. We recommend that the Washington Aqueduct contact the Department of Historic Resources (Marc Holma, telephone (804) 367-2323, extension 114).

Mr. Thomas P. Jacobus
Page 8

Thank you for the opportunity to comment. If you have questions about this response, please feel free to contact me (telephone (804) 698-4325) or Charles Ellis of this Office (telephone (804) 698-4488).

Sincerely,

A handwritten signature in black ink, appearing to read "Ellie L. Irons". The signature is fluid and cursive, with the first name "Ellie" being more prominent than the last name "Irons".

Ellie L. Irons
Program Manager
Office of Environmental Impact Review

Enclosures

cc: Andrew K. Zadnik, DGIF
Keith R. Tignor, VDACS
S. Rene Hypes, DCR-DNH
Alice R. T. Baird, DCR-DCBLA
Alan D. Weber, VDH
Allen R. Brockman, DEQ-Waste
Kotur S. Narasimhan, DEQ-Air
John D. Bowden, DEQ-NVRO
Marlee A. Parker, VDOT
Marc E. Holma, DHR
Gerald P. Wilkes, DMME
J. Michael Foreman, DOF
Katherine K. Mull, NVRC
John Mausert-Mooney, Arlington County DES
Pamela G. Nee, Fairfax County DPZ

Ellis, Charles

From: Andrew Zadnik [Andrew.Zadnik@dgif.virginia.gov]
Sent: Thursday, May 26, 2005 4:50 PM
To: Ellis, Charles
Cc: ProjectReview.Richmond_PO.DGIF@dgif.virginia.gov
Subject: Re: Washington Aqueduct (Balt. Corps of Engineers): EIS on "Water Treatment Residuals Management Process"

This project involves constructing a permanent residuals management process that will collect, treat, and dispose of water treatment residuals. The preferred alternative (Alt E) involves collecting residuals from the Georgetown Reservoir and the Dalecarlia WTP sedimentation basins, processing the material (via gravity thickening and dewatering) at the eastern portion of the Dalecarlia WTP property and hauling the material to an offsite disposal facility.

As this project will occur within Maryland and the District of Columbia, we do not anticipate a significant adverse impact upon threatened or endangered wildlife resources under our jurisdiction to occur.

Thank you,

Andrew K. Zadnik
Environmental Services Section Biologist
Department of Game and Inland Fisheries
4010 West Broad Street
Richmond, VA 23230

(804) 367-2733
(804) 367-2427 (fax)

If you cannot meet the deadline, please notify CHARLIE ELLIS at 804/698-4488 prior to the date given. Arrangements will be made to extend the date for your review if possible. An agency will not be considered to have reviewed a document if no comments are received (or contact is made) within the period specified.

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- C. Use your agency stationery or the space below for your comments. **IF YOU USE THE SPACE BELOW, THE FORM MUST BE SIGNED AND DATED.**

Please return your comments to:

MR. CHARLES H. ELLIS III
DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF ENVIRONMENTAL IMPACT REVIEW
629 EAST MAIN STREET, SIXTH FLOOR
RICHMOND, VA 23219
FAX #804/698-4319

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COMMENTS


CHARLES H. ELLIS III
ENVIRONMENTAL PROGRAM PLANNER

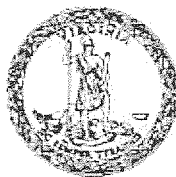
Statements in the project document concerning endangered species were reviewed and compared to available information. No additional comments are necessary in reference to endangered plant and insect species regarding this project.

(signed)  (Keith R. Tignor) (date) May 20, 2005
Endangered Species Coordinator
(title) VDACS, Office of Plant and Pest Service
(agency)

PROJECT # 05-122F

8/98

W. Tayloe Murphy, Jr.
Secretary of Natural
Resources



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MAY 27 2005

Joseph H. Maroon
Director

DEQ-Office of Environmental
Impact Review

COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

217 Governor Street
Richmond, Virginia 23219-2010
Telephone (804) 786-7951 FAX (804) 371-2674 TDD (804) 786-2121

May 25, 2005

Charles Ellis III
DEQ- Office of Environmental Impact Review
629 East Main Street, Sixth Floor
Richmond, VA 23219

Re: #05-122F Water Treatment Residuals Management Process for the Washington Aqueduct

Dear Mr. Ellis:

The Department of Conservation and Recreation's Division of Natural Heritage (DCR) has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

Biotics documents the presence of natural heritage resources in the project area. However, due to the scope of the activity and the distance to the resources, we do not anticipate that this project will adversely impact these natural heritage resources.

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the Virginia Department of Conservation and Recreation (DCR), DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects.


Our files do not indicate the presence of any State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

Any absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks additional natural heritage resources. New and updated information is continually added to Biotics. Please contact DCR for an update on this natural heritage information if a significant amount of time passes before it is utilized.

The Virginia Department of Game and Inland Fisheries maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters, that may contain information not documented in this letter. Their database may be accessed from http://www.dgif.virginia.gov/wildlife/info_map/index.html, or contact Shirl Dressler at (804) 367-6913.

Should you have any questions or concerns, feel free to contact me at 804-692-0984. Thank you for the opportunity to comment on this project.

Sincerely,


Michelle E. Edwards
Locality Liaison

cc: Scott Crafton, DCR

Ellis,Charles

From: Larry Gavan [Larry.Gavan@dcr.virginia.gov]
Sent: Tuesday, May 31, 2005 1:14 PM
To: Ellis,Charles
Cc: Scott Crafton
Subject: EIR- Proposed Water Treatment Residuals Process, WashingtonAquaduct, Washington D.C.

No Comment. Thanks.

5/31/2005

Ellis,Charles

From: Larry Gavan [Larry.Gavan@dcr.virginia.gov]
Sent: Tuesday, May 31, 2005 1:14 PM
To: Ellis,Charles
Cc: Scott Crafton
Subject: EIR- Proposed Water Treatment Residuals Process, WashingtonAquaduct, Washington D.C.

No Comment. Thanks.

5/31/2005

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Please return your comments to:

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DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF ENVIRONMENTAL IMPACT REVIEW
629 EAST MAIN STREET, SIXTH FLOOR
RICHMOND, VA 23219
FAX #804/698-4319

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CHARLES H. ELLIS III
ENVIRONMENTAL PROGRAM PLANNER

COMMENTS

Any waste impacts from this project would occur on the Maryland side of the State Line. Therefore, the Waste Division has no comments on this document.

(signed) Allen R. Brockman (date) 5-18-05
(title) Waste Regulations Writer & EIR Contact
(agency) VA. Dept. of Environmental Quality

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Please return your comments to:

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DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF ENVIRONMENTAL IMPACT REVIEW
629 EAST MAIN STREET, SIXTH FLOOR
RICHMOND, VA 23219
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Impact Review

COMMENTS

No comments


CHARLES H. ELLIS III
ENVIRONMENTAL PROGRAM PLANNER

(signed) Alan D. Weber (date) 5-19-05
(title) _____
(agency) VDH

DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR PROGRAM COORDINATION

ENVIRONMENTAL REVIEW COMMENTS APPLICABLE TO AIR QUALITY

RECEIVED

TO: Charles H. Ellis III

DEQ - OEIA PROJECT NUMBER: 05 - 122F

MAY 09 2005

PROJECT TYPE: ☐ STATE EA / EIR / FONSI ☒ FEDERAL EA / EIS ☐ SCC

☐ CONSISTENCY DETERMINATION/CERTIFICATION

DEQ-Office of Environmental
Impact Review

PROJECT TITLE: WATER TREATMENT RESIDUALS MANAGEMENT PROCESS FOR THE
WASHINGTON AQUEDUCT

PROJECT SPONSOR: DOD / ARMY / ARMY CORPS OF ENGINEERS

PROJECT LOCATION: X OZONE NON ATTAINMENT AREA

REGULATORY REQUIREMENTS MAY BE APPLICABLE TO: ☒ CONSTRUCTION
☐ OPERATION

STATE AIR POLLUTION CONTROL BOARD REGULATIONS THAT MAY APPLY:

1. ☐ 9 VAC 5-40-5200 C & 9 VAC 5-40-5220 E – STAGE I
2. ☐ 9 VAC 5-40-5200 C & 9 VAC 5-40-5220 F – STAGE II Vapor Recovery
3. ☐ 9 VAC 5-40-5490 et seq. – Asphalt Paving operations
4. ☒ 9 VAC 5-40-5600 et seq. – Open Burning
5. ☒ 9 VAC 5-50-60 et seq. Fugitive Dust Emissions
6. ☐ 9 VAC 5-50-130 et seq. - Odorous Emissions; Applicable to _____
7. ☐ 9 VAC 5-50-160 et seq. – Standards of Performance for Toxic Pollutants
8. ☐ 9 VAC 5-50-400 Subpart _____, Standards of Performance for New Stationary Sources, designates standards of performance for the _____
9. ☐ 9 VAC 5-80-10 et seq. of the regulations – Permits for Stationary Sources
10. ☐ 9 VAC 5-80-1700 et seq. Of the regulations – Major or Modified Sources located in PSD areas. This rule may be applicable to the _____
11. ☐ 9 VAC 5-80-2000 et seq. of the regulations – New and modified sources located in non-attainment areas
12. ☐ 9 VAC 5-80-800 et seq. Of the regulations – Operating Permits and exemptions. This rule may be applicable to _____

COMMENTS SPECIFIC TO THE PROJECT:

Being in an area of ozone non-attainment, all precautions are necessary to restrict the emissions of volatile organic compounds (VOC) and oxides of nitrogen (NOx) during construction.

P.S: It is presumed that an alternative of locating residual recovery facility at the Monofill site itself with pipeline transportation of feed for recovery is also considered and dispensed to eliminate perennial use of trucks. This alternative favors to protect air quality and conserve oil.

K.S. Narasimhan

(Kotur S. Narasimhan)
Office of Air Data Analysis

DATE: May 9, 2005

Ellis, Charles

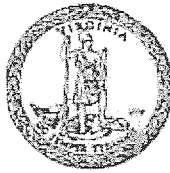
From: Bowden, John
Sent: Monday, May 23, 2005 10:22 AM
To: Ellis, Charles
Subject: Draft EIS #05-122F

NVRO comments regarding the Water Treatment Residuals Management Process for the Washington Aqueduct project sponsored by the DOS/Army/Army Corps of Engineers are as follows:

It appears that all of the activities of this project fall outside the jurisdictional boundaries of the Commonwealth of Virginia except that the hauling of de-watered residuals by truck may be on some highways located in Virginia, namely the Beltway Rt. 495. The draft EIS indicates that the residuals would be possibly be hauled to a yet undetermined disposal site. If disposal at a site in Virginia is selected, then further review by DEQ would be necessary to ensure compliance with all environmental laws and regulations.

John D. Bowden
Deputy Regional Director
Department of Environmental Quality
Northern Virginia Regional Office
(703) 583-3880
jdbowden@deq.virginia.gov

5/23/2005



COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
1401 EAST BROAD STREET
RICHMOND, 23219-2000

PHILIP A. SHUCET
COMMISSIONER

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MAY 13 2005

DEQ-Office of Environmental
Impact Review

May 11, 2005

Mr. Charles H. Ellis
Department of Environmental Quality
Office of Environmental Impact Review
629 East Main St., Sixth Floor
Richmond VA 23219

Re: **Project #05-122F, Water Treatment Residuals Management Process for the Washington Aqueduct, Washington D.C.**

Dear Mr. Ellis:

Mr. Robert McDonald, P.E., of the Virginia Department of Transportation has reviewed the attached Draft Environmental Impact Statement (DEIS) that you provided relating to the proposed actions to dispose of water treatment residuals from the Dalecarlia treatment plant in Washington, D.C. The preferred alternative is to truck the residuals from the treatment plant to a disposal site in either Maryland or Virginia. Two (2) of the potential Virginia Routes involved in the hauling are Routes VA 123 (Chain Bridge Road) and VA 193 (Georgetown Pike), in addition to the Capital Beltway (I-495) and other unspecified routes – the disposal site is not identified in the DEIS.

Both VA 123 and VA 193 pass through many residential areas between the District of Columbia and the Capital Beltway. The preferred alternative will not significantly impact any planned highway improvement projects. Route 123 is slated to be widened between the Dulles Toll Road ramps and Great Falls Street (VA 694) – a distance of only a few hundred feet – from its present four (4) lanes to six (6) lanes in the 2010 timeframe. No specific improvements have been scheduled for VA 193, but are being studied for traffic calming measures (VDOT project UPC 57547) because of its geometry and concerns by adjoining residents over thru-traffic. The entire length of VA 193 (from VA 7 to VA 123) is a scenic route (Virginia Byway) and is only two (2) lanes wide. A feature along VA 193 that is not mentioned in the DEIS, but which should be given consideration, is the Cooper Middle School that has an entrance on Balls Hill Road (VA 686) which is very close to the VA 193 interchange with I-495. While the school traffic does not directly access VA 193, the school property is adjacent to VA 193 and there is likely to be some morning and afternoon congestion in the vicinity of the school.

Mr. McDonald suggests that consideration be given to using the George Washington Memorial Parkway as a route to reach I-495, if the selected truck haul route goes through northern Virginia. While the Parkway prohibits truck usage, it seems that if one agency of the Federal Government (the Corps of Engineers, which operates the Dalecarlia treatment plant) wants to dispose of its waste it could obtain a permit for the limited truck operation on the Parkway from another element of the same Federal Government (the National Park Service). Use of the Parkway would eliminate impacts on residential areas, pedestrian impacts, and delays at traffic lights / intersections.

Mr. McDonald identified two (2) specific concerns with the DEIS text:

- Truck hauling hours. Section 3.10.5 (page 3-48) indicates the hauling will take place between 6 AM and 4 PM, with a concentration between 9 AM and 3 PM to avoid peak period traffic. However, Section 4.11.3.2 (page 4-54) indicates that the haul operation may occur between 7 AM and 7 PM. The times should be consistent.
- Disposal site(s). The DEIS addresses options to haul residual water treatment waste from the treatment plant and proposes haul routes that lead to the Capital Beltway. However, the potential disposal sites are not mentioned so it is impossible to evaluate whether the proposed haul operation will have a significant impact on local roads leading from I-495 (or other major arterial involved) to the disposal sites. Section 4.16.3.2 (page 4-98) states that "... additional agricultural end users would need to be identified"... before all the residuals could be assimilated into the market for residual disposal. The residual disposal case studies cited to show current practice mention two Fairfax County Water Authority treatment plants, one in Occoquan and the other in Herndon. Without an indication of the likely disposal sites for the Dalecarlia residuals, it is not possible to fully evaluate the impact on local northern Virginia roads of the preferred alternative.

In summary, a complete evaluation of the preferred alternative's impacts on local roads in Northern Virginia can not be provided since not all the roads that may be involved have been identified. Both of the two (2) haul road options cited in the DEIS (VA 123 and VA 193) traverse residential areas. An existing road that does not pass through any residential areas or intersections (George Washington Parkway) was not considered, but should be.

All work with the potential to effect roadways or other transportation facilities should be coordinated with VDOT's Northern Virginia District Office 703.383.2000.

Thank you for the opportunity to comment on this project.

Sincerely,



Marlee A. Parker
Environmental Specialist II
VDOT
1401 East Broad Street
Richmond, Virginia 23219
804.786.9683 - O
804.786.7401 - FAX

If you cannot meet the deadline, please notify CHARLIE ELLIS at 804/698-4488 prior to the date given. Arrangements will be made to extend the date for your review if possible. An agency will not be considered to have reviewed a document if no comments are received (or contact is made) within the period specified.

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DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF ENVIRONMENTAL IMPACT REVIEW
629 EAST MAIN STREET, SIXTH FLOOR
RICHMOND, VA 23219
FAX #804/698-4319

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CHARLES H. ELLIS III
ENVIRONMENTAL PROGRAM PLANNER

COMMENTS

NO IMPACT TO THE GEOLOGY OR
MINERAL RESOURCES.

signed) 

(date) 5/16/05

(title) GEOLOGIST

(agency) DMME



COMMONWEALTH of VIRGINIA

Department of Historic Resources

2801 Kensington Avenue, Richmond, Virginia 23221

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

Kathleen S. Kilpatrick
Director

Tel: (804) 367-2323
Fax: (804) 367-2391
TDD: (804) 367-2388
www.dhr.state.va.us

May 26, 2005

Mr. Thomas P. Jacobus
Washington Aqueduct
US Army Corps of Engineers—Baltimore District
5800 MacArthur Boulevard, NW
Washington, DC 20016-2514

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MAY 31 2005

Re: Water Treatment Residuals Management Process for the Washington Aqueduct
Fairfax and Arlington Counties
DEQ Project No. 05-122F
VDHR File No. 2004-1374

DEQ-Office of Environmental
Impact Review


Dear Mr. Silva:

Through the Virginia Department of Environmental Quality we have received a draft Environmental Impact Statement for the proposed Water Treatment Residuals Management Process for the Washington Aqueduct.

We want to remind you that the Army Corps of Engineers, as a federal agency, must consider the effects of its actions on historic properties listed in or eligible for the National Register of Historic Places and provide the Advisory Council on Historic Preservation the opportunity to comment in accordance with Sections 106 of the National Historic Preservation Act, as amended, and its implementing regulation 36 CFR 800. The Section 106 review process begins when the federal agency provides a description of the undertaking and its Area of Potential Effect (APE) to the State Historic Preservation Officer (SHPO), which in Virginia is the Department of Historic Resources (DHR). For this reason we request that you consult with us directly on this undertaking. While 36 CFR 800.8 allows federal agencies to coordinate Section 106 compliance with the National Environmental Policy Act (NEPA), the agency must inform the applicable SHPO early in the process that it intends to do so. The agency must also take care that the environmental documentation prepared under NEPA does present information about historic properties and potential effects to such resources at a level of detail that allows the SHPO and other consulting parties to comment.

We look forward to working with you on this project. If you have any questions concerning our comments, please contact me at (804) 367-2323, ext. 114.

Sincerely,


Marc Holma, Architectural Historian
Office of Review and Compliance

Administrative Services
10 Courthouse Avenue
Petersburg, VA 23803
Tel: (804) 863-1624
Fax: (804) 862-6196

Capital Region Office
2801 Kensington Ave.
Richmond, VA 23221
Tel: (804) 367-2323
Fax: (804) 367-2391

Portsmouth Region Office
612 Court Street, 3rd Floor
Portsmouth, VA 23704
Tel: (757) 396-6707
Fax: (757) 396-6712

Roanoke Region Office
1030 Penmar Ave., SE
Roanoke, VA 24013
Tel: (540) 857-7585
Fax: (540) 857-7588

Winchester Region Office
107 N. Kent Street, Suite 203
Winchester, VA 22601
Tel: (540) 722-3427
Fax: (540) 722-7535

Cc: Mr. Charles H. Ellis, III, Department of Environmental Quality

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OFFICE OF ENVIRONMENTAL IMPACT REVIEW
629 EAST MAIN STREET, SIXTH FLOOR
RICHMOND, VA 23219
FAX #804/698-4319

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MAY 06 2005

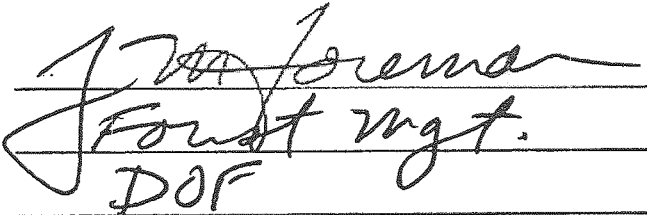
DEQ-Office of Environmental
Impact Review


CHARLES H. ELLIS III
ENVIRONMENTAL PROGRAM PLANNER

COMMENTS

*No significant impact on the
forest resources of the Commonwealth*

(signed)


Foreman
DOF

(date)

5-4-05

(title)

(agency)

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FAX #804/698-4319

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MAY 31 2005

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Impact Review


CHARLES H. ELLIS III
ENVIRONMENTAL PROGRAM PLANNER

COMMENTS

No comments

(signed) Alice R.T. Seidel (date) 5-26-05
(title) Chesapeake Bay Special Projects Coordinator
(agency) DCR - DCBLA

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OFFICE OF ENVIRONMENTAL IMPACT REVIEW
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FAX #804/698-4319

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DEQ-Office of Environmental
Impact Review


CHARLES H. ELLIS III
ENVIRONMENTAL PROGRAM PLANNER

COMMENTS

*No significant impact on the
forest resources of the Commonwealth*

(signed)


Forest Mgt.
DOF

(date)

5-4-05

(title)

(agency)



Northern Virginia Regional Commission

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MAY 19 2005

DEQ-Office of Environmental
Impact Review

May 17, 2005

Mr. Charles H. Ellis III
Department of Environmental Quality
Office of Environmental Impact Review
629 East Main Street, Sixth Floor
Richmond, VA 23219

Re: Federal Project 05-122F

The Northern Virginia Regional Commission staff has reviewed the application described above and has no comment on the proposal.

Thank you for this opportunity to participate in the intergovernmental review process.

Sincerely,

Katherine K. Mull
Senior Environmental Planner

Project: Water Treatment Residuals Management Process for the
Washington Aqueduct

Sponsor: DOD/Army/Army Corps of Engineers

Chairman
Hon. Kristen C. Umstattd
Vice-Chairman
Hon. Barbara A. Favola
Treasurer
Hon. Gerald E. Connolly
Executive Director
G. Mark Gibb

County of Arlington
Hon. Barbara A. Favola
Hon. J. Walter Tejada

County of Fairfax
Hon. Sharon Bulova
Hon. Gerald E. Connolly
Hon. Joan DuBois
Hon. Penelope A. Gross
Hon. Catherine M. Hudgins
Hon. Elaine N. McConnell
Hon. Linda Smyth

County of Loudoun
Hon. Bruce E. Tulloch
Hon. Lori Waters

County of Prince William
Hon. Hilda M. Barg
Hon. W. S. "Wally" Covington, III
Hon. Martin E. Nohe

City of Alexandria
Hon. Redella S. Pepper
Hon. Paul C. Smedberg

City of Fairfax
Hon. Joan Cross

City of Falls Church
Hon. Robln S. Gardner

City of Manassas
Hon. Harry J. "Hal" Parrish, II

City of Manassas Park
Hon. Bryan E. Polk

Town of Dumfries
Hon. Melvin Bray

Town of Herndon
Hon. Michael L. O'Reilly

Town of Leesburg
Hon. Kristen C. Umstattd

Town of Purcellville
Hon. William T. Druhan, Jr.

Town of Vienna
Hon. M. Jane Seeman

(as of January 27, 2005)

Ellis, Charles

From: Nee, Pamela [Pamela.Nee@fairfaxcounty.gov]
Sent: Thursday, May 26, 2005 9:59 AM
To: Ellis, Charles
Cc: Kaplan, Noel
Subject: FW: Washington Aqueduct (Balt. Corps of Engineers): EIS on "Water Treatment Residuals Management Process for the Washington Aqueduct" (DEQ-05-122F)

Mr. Ellis,

Fairfax County does not have any comments on this draft EIS. If you have any questions, please contact me.

Thanks,
Pam

Pamela G. Nee, Chief
Environment and Development Review Branch
Fairfax County Department of Planning and Zoning
(703) 324-1233 (direct)
(703) 324-1210 Planning Division receptionist
(703) 324-3056 (FAX)



DEPARTMENT OF ENVIRONMENTAL SERVICES
Utilities and Environmental Policy Division

2100 Clarendon Boulevard, Suite 710 Arlington, VA 22201
TEL 703.228.4488 FAX 703.228.7134 www.arlingtonva.us

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Impact Review

May 13, 2005

Mr. Charles H. Ellis III, Environmental Program Planner
Department of Environmental Quality
Office of Environmental Impact Review
629 East Main Street, Sixth Floor
Richmond, VA 23219

Dear Mr. Ellis:

We have reviewed the Draft Environmental Impact Statement (DEIS) for the Dalecarlia water treatment facility modifications that are required to address new discharge permit requirements for dewatering and removal of water treatment residuals. The County is very impressed with the thoroughness of the report. We concur that Option E (Dewatering at East Dalecarlia Processing Site and Offsite Disposal by Trucking) appears to be the best overall solution environmentally. This option also provides the potential of using water treatment residuals in an environmentally beneficial manner.

The following comments are based on our review of the DEIS:

- We suggest that a 20-year lowest life cycle cost analysis be performed to determine the most appropriate equipment and to determine the best choice of materials for the construction of wetted materials. The County's experience with a major upgrade of its Water Pollution Control Plant indicates that selection of equipment and materials on this basis substantially reduces the overall long-term facility costs (capital, operations, and maintenance), minimizes down time, and provides better reliability.
- We furthermore suggest that onsite tests be performed on all equipment, including dewatering equipment, under controlled conditions to verify performance and to allow a valid net 20-year lowest life cycle cost analysis to be performed.
- We recommend site visits to other facilities that currently utilize any proposed equipment to ensure that the proper equipment is specified.
- We suggest that the assumptions in section 4.14.3 Impact Evaluation by Alternative and Option, table 4-8, page 4-83, for chemicals, labor, and

contract hauling costs be verified, as they appear somewhat low based on the County's experience.

- We suggest that Little Falls Road be analyzed to determine if it has the structural capability to handle the truck traffic modifications that are required to support the recommended option, and to determine if there are any additional costs for improvements
- The DEIS identifies the following redundancy levels to accommodate anticipated residual loading at the facility:
 - Gravity thickeners - one unit out of a total of four units.
 - Centrifuges, if selected, - two units out of a total of six units.
 - Transmission lines for conveying the residuals from remote locations – two lines, each sized to convey 100% of the normal loading.

We believe that this level of redundancy is appropriate for this type of facility for both normal and peak loads.

Given the significant financial and operational impacts of the decision to discontinue the historical practice of discharging water treatment residuals to the Potomac River, the County appreciates the open and inclusive process that has been followed throughout the development of the Draft Environmental Impact Statement. Although there may still be concerns about neighborhood impacts of the proposed trucking operation, it seems clear from this comprehensive analysis that the recommended option is the best from both an environmental, as well as an economic perspective. We appreciate the efforts by the U. S. Army Corps of Engineers, and in particular, the staff of the Dalecarlia Water Treatment Facility, to produce the DEIS within a very challenging timeframe. The thoroughness and professionalism shown throughout this process reflects a genuine effort to respond to community and customer concerns and we appreciate this effort.

Sincerely,

A handwritten signature in black ink that reads "John Mausert-Mooney" followed by a stylized monogram or initials.

John Mausert-Mooney
Director

Cc: Randy Bartlett, Director, Department of Environmental Services



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

JUN 27 2005

Mr. Thomas P. Jacobus *J. P. Jacobus*
General Manager
Washington Aqueduct
U.S. Army Corps of Engineers,
Baltimore District
5900 MacArthur Boulevard, NW
Washington, DC 20016

Re: Draft Environmental Impact Statement for the Washington Aqueduct Residuals Project.
CEQ #20050154

Dear Mr. Jacobus:

In accordance with the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) regulations (40 CFR 1500-1508), and Section 309 of the Clean Air Act, the Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (DEIS) for the above referenced project.

The Washington Aqueduct removes sediment from water drawn from the Potomac River by adding aluminum sulfate as a coagulant. In the past the solids accumulated as part of this process were periodically flushed to the Potomac River. This practice was permitted under the Washington Aqueduct's former National Pollutant Discharge Elimination System (NPDES) permit. Under the current NPDES permit (issued March 19, 2003; amended and re-issued February 27, 2004), the allowable concentration of residuals that may be discharged by Washington Aqueduct to the Potomac River has been significantly reduced to levels consistent with the NPDES permits of other water treatment plants. The NPDES permit allows the Washington Aqueduct to select the method of treatment so long as the effluent limits in the NPDES permit, which were effective immediately, are achieved. EPA and the U.S. Army Corps of Engineers entered into a Federal Facilities Compliance Agreement ("FFCA") to establish a schedule to allow the Washington Aqueduct a reasonable time period to select and install treatment to comply with its NPDES Permit. The FFCA schedule takes into account the Washington Aqueduct's NEPA obligations and related regulations and guidance, as well as the procedures and time lines set out in the Federal Acquisition Regulations, the Department of Defense Acquisition Regulations, and the Department of the Army Acquisition Regulations.

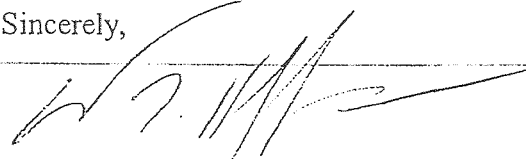
Based on our review of the DEIS, EPA has rated the environmental impacts of Alternatives E, the Lead Agency's preferred alternative, as "EC" (Environmental Concerns) and the adequacy of the impact statement as "1" (Adequate). EPA would also support a combination of alternatives or a phased selection and implementation of treatment alternatives so long as such



an approach is consistent with the requirements of NEPA and achieves the project purpose and need of compliance with the requirements of the NPDES permit within the time frame described in the FFCA. A copy of EPA's ranking system is enclosed for your reference. The basis for these ratings are contained in the attachment to this letter.

Thank you for the opportunity to offer these comments. If you have any questions, please contact Kevin Magerr at (215)814-5724.

Sincerely,

A handwritten signature in dark ink, appearing to read 'W. J. Hoffman', is written over a horizontal line.

William J. Hoffman, Chief
Environmental Programs Branch

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Environmental Impact Statement (EIS) Rating System Criteria

EPA has developed a set of criteria for rating draft EISs. The rating system provides a basis upon which EPA makes recommendations to the lead agency for improving the draft EIS.

- [Rating the Environmental Impact of the Action](#)
- [Rating the Adequacy of the Draft Environmental Impact Statement \(EIS\)](#)

RATING THE ENVIRONMENTAL IMPACT OF THE ACTION

- **LO (Lack of Objections)** The review has not identified any potential environmental impacts requiring substantive changes to the preferred alternative. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposed action.
- **EC (Environmental Concerns)** The review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact.
- **EO (Environmental Objections)** The review has identified significant environmental impacts that should be avoided in order to adequately protect the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). The basis for environmental Objections can include situations:
 1. *Where an action might violate or be inconsistent with achievement or maintenance of a national environmental standard;*
 2. *Where the Federal agency violates its own substantive environmental requirements that relate to EPA's areas of jurisdiction or expertise;*
 3. *Where there is a violation of an EPA policy declaration;*
 4. *Where there are no applicable standards or where applicable standards will not be violated but there is potential for significant environmental degradation that could be corrected by project modification or other feasible alternatives; or*
 5. *Where proceeding with the proposed action would set a precedent for future actions that collectively could result in significant environmental impacts.*
- **EU (Environmentally Unsatisfactory)** The review has identified adverse environmental impacts that are of sufficient magnitude that EPA believes the proposed action must not proceed as proposed. The basis for an environmentally unsatisfactory determination consists of identification of environmentally objectionable impacts as defined above and one or more of the following conditions:

1. *The potential violation of or inconsistency with a national environmental standard is substantive and/or will occur on a long-term basis;*
2. *There are no applicable standards but the severity, duration, or geographical scope of the impacts associated with the proposed action warrant special attention; or*
3. *The potential environmental impacts resulting from the proposed action are of national importance because of the threat to national environmental resources or to environmental policies.*

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RATING THE ADEQUACY OF THE DRAFT ENVIRONMENTAL IMPACT STATEMENT (EIS)

- **1 (Adequate)** The draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.
- **2 (Insufficient Information)** The draft EIS does not contain sufficient information to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the proposal. The identified additional information, data, analyses, or discussion should be included in the final EIS.
- **3 (Inadequate)** The draft EIS does not adequately assess the potentially significant environmental impacts of the proposal, or the reviewer has identified new, reasonably available, alternatives, that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. The identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. This rating indicates EPA's belief that the draft EIS does not meet the purposes of NEPA and/or the Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS.

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Last updated on Wednesday, April 6th, 2005
URL: <http://www.epa.gov/compliance/nepa/comments/ratings.html>

Detailed Comments
Draft EIS - Washington Aqueduct Residuals Project
June 27, 2005

General Comments

1. ~~Clarity might be improved by grouping the analysis of Noise impacts with the analysis of Transportation impacts. That would allow greater ease of cross-reference for statements such as those related to the frequency of truck traffic.~~
2. The Proposed Water Treatment Residuals Management Process - Alternatives Analysis Submitted in Fulfillment of the FFCA (December 2004 document) included a concept for truck traffic (Section 3.31.2). The concept integrated seven haul routes which could provide operational flexibility during changing traffic conditions. Further expressed, this strategy would offer the potential to disperse the volume of traffic over a wider network of roads. It is unclear whether this concept was carried forward in the DEIS, and if not, why not?
3. The clarity of various discussions in the DEIS of impacts related to alternatives involving trucking could be improved by better consistency with respect to the types of trucks. For example, in Tables 4-1 and 4-2 in Section 4.4, discussing potential air emissions, the discussion of impacts assumes 20 trucks per day, five days per week using 11 cubic yard trucks. The discussion of noise impacts in Section 4.3 does not appear to identify the types of trucks being discussed, and it is not clear from the discussion whether the size of the truck would have an impact on noise. Although not specifically stated, Section 4.11 (transportation impacts) appears to assume use of 22 cubic yard trucks making an average of 8 trips per day up to 33 trips per day under peak conditions. In addition, clarity could be improved by stating whether the number of truck trips per day refers to round-trips to and from the facility or one-way trips from the facility. EPA assumes the reference is to round trips.
4. EPA disagrees with the conclusion in Section 4.5.3.4 that implementation of Alternative D, the no action alternative, would have no significant impact on Aquatic Resources. Implementation of Alternative D essentially contemplates elimination of or noncompliance with the effluent limits set forth in the Washington Aqueduct's NPDES Permit. In 1996, Whitman, Requardt & Associates estimated an average daily accumulation of aqueous solids in the Dalecarlia sedimentation basins of at least 28,000 pounds and in the Georgetown sedimentation basins at 23,400 pounds. When fully implemented, the NPDES Permit will prevent discharge of these aqueous solids to the Potomac River. Implementation of the NPDES Permit will reduce the pollutant loading to the Potomac River, downstream portions of which are identified as impaired for sediment by Maryland's list of water quality limited segments pursuant to Section 303(d) of the Clean Water Act.

5. Based on comments shared with EPA, there appears to be considerable public confusion regarding the role of the National Pollutant Discharge Elimination System Permit DC0000019 ("the NPDES Permit") and the Federal Facilities Compliance Agreement ("FFCA") with respect to the project. Accordingly, the EIS could be improved by a more detailed discussion of the project's purpose and need, specifically the need to comply with the NPDES Permit in a timely manner. The NPDES Permit was issued March 19, 2003. (It was amended and re-issued February 27, 2004.) It superseded two previously-issued NPDES permits (NPDES Permit No. DC0000019 (issued April 3, 1989) and NPDES Permit No. DC000329 (issued February 4, 1998)), one of which had been administratively extended beyond its expiration date since 1994.

The public was given opportunity to comment on the NPDES Permit. EPA published a public notice of a 30-day comment period for the draft permit in the Washington Post and Washington Times on March 28, 2002 and extended this public comment period for an additional 60 days to June 28, 2002. EPA received comments from 52 interested parties. In response to comments received from the public, EPA amended the draft permit and fact sheet and offered a revised draft permit and fact sheet for public comment on December 18, 2002 until January 30, 2003. Notice of the December 2002, public comment period was published in the Washington Post and Washington Times. On January 21, 2003, EPA conducted a public hearing at Sibley Memorial Hospital in Washington, D.C. Three persons offered testimony during the public hearing. EPA received comments from 13 interested parties and the Commonwealth of Virginia.

The NPDES Permit issued in March 19, 2003 imposed effluent limits on the discharges from the Washington Aqueduct to the Potomac River and its tributaries. The NPDES Permit does not prescribe any treatment or recommended option for meeting the imposed effluent limits. Among other things, the NPDES Permit includes technology-based limits on total suspended solids ("TSS") and aluminum consistent with the requirements of the Clean Water Act. Section 301(b)(1)(A) (33 U.S.C. § 1311(b)(1)(A)) requires that all point sources achieve technology-based limits based on "best practicable control technology currently available" no later than July 1, 1977. Section 301(b)(2)(E) (33 U.S.C. § 1311(b)(2)(E)) requires that all point sources discharging "conventional pollutants," such as TSS, implement technology-based limits based on "best conventional pollutant control technology" no later than March 31, 1989. Thus, the effluent limits required in the Washington Aqueduct's NPDES Permit are required and overdue.

Because EPA has not promulgated industry-wide technology-based effluent limitation guidelines for water treatment plants, EPA calculated technology-based discharge limits for the Washington Aqueduct using best professional judgment. 33 U.S.C. § 1342(a)(2). In the course of developing technology-based effluent limits for the Washington Aqueduct, EPA conducted a survey of over 400 water treatment plants located in Region III. The permits for these facilities contained TSS limits similar to, if not more stringent than, the TSS limits that were placed in the Washington Aqueduct's NPDES permit. EPA also considered, among other things, technology transfer information and the fact that the NPDES permit for the nearby Washington Suburban Sanitary Commission Potomac River Water Filtration Plant includes the same limits as those in the Washington Aqueduct permit.

Because the Clean Water Act does not allow EPA to include a compliance schedule delaying attainment of the TSS discharge limits and the aluminum discharge limits in the Washington Aqueduct's NPDES Permit beyond the 1989 statutory deadline, See 33 U.S.C. § 1311(b)(2)(E); 40 C.F.R. §§ 122.47(a) & 125.3(a)(2)(i)(B) & (ii)(B), those permit limits were effective immediately. EPA and the Washington Aqueduct recognized that, in order to implement the NPDES Permit limits, the Washington Aqueduct must install treatment facilities that were not in place and comply with numerous statutory and regulatory requirements, including but not limited to the National Environmental Policy Act ("NEPA"). In other words, EPA and the Washington Aqueduct acknowledged that the Washington Aqueduct could not, as a practical matter, immediately comply with its NPDES permit limits. At the same time, it was recognized that it was impracticable to expect the Washington Aqueduct to cease operations while it selects and installs treatment technology to achieve the effluent limitations in the NPDES Permit because the ongoing operation of the Washington Aqueduct is necessary to provide a continuous supply of drinking water to the residents of Washington, D.C., Arlington County and the customers of the City of Falls Church. Accordingly, EPA and the Washington Aqueduct entered into the FFCA to provide an enforceable compliance schedule for achieving the numeric effluent limitations in NPDES Permit No. DC0000019 as expeditiously as possible and to provide environmentally protective conditions for the interim operation of the facility.

The phrase "voluntary agreement" used by some members of the public with respect to the FFCA reflects confusion regarding the nature of that document. EPA and the Washington Aqueduct entered into the FFCA pursuant to the Clean Water Act, 33 U.S.C. §§ 1251-1387, and Executive Order No. 12088 (Federal Compliance With Pollution Control Standards). The FFCA contains a "plan," as described in Section 1-601 of Executive Order No. 12088, for the Washington Aqueduct to achieve and maintain compliance with the NPDES Permit and the Clean Water Act.

The FFCA requires the Washington Aqueduct to comply with the discharge limitations in its Clean Water Act permit at one or more of the sedimentation basins within the permit term and no later than March 1, 2008 (roughly 60 months after issuance of the permit) and at all basins no later than December 30, 2009 (roughly 79 months after issuance of permit). Although EPA was not required to do so, EPA solicited public comment on the FFCA due to the significant public interest in the Washington Aqueduct. EPA's notice of availability of a draft FFCA and request for public comment was published in the Washington Post and the Washington Times on March 17, 2003. The comment period was 30 days, and EPA received comments from five persons

6. The DEIS includes photographs of current views in Section 3 and the visual simulations in Section 4, thus making comparison of "before" and "after" visuals somewhat more challenging than would seem necessary. Clarity could be improved by placing the photographs of the current views alongside or near the visual simulations for ease of comparison.

7. Section 4.13 should identify whether there are any schools along any of the proposed trucking routes.

8. The District of Columbia and the surrounding areas are in non-attainment of the National Ambient Air Quality Standard for Fine Particulate Matter of 2.5 micronmeters (PM2.5). EPA believes that the DEIS should include an analysis of the local PM2.5 impacts, if any, associated with the project.

9. The Corps should investigate the use of Alum recycling as part of the solids processing facility. EPA recognizes that Alum recycling may present issues in connection with the drinking water process, however the Corps should evaluate whether an in depth analysis is appropriate.

~~10. In an effort to minimize air quality issues, the Corps should control or minimize construction emissions through the use of the following Best Management Practices:~~

- Utilize appropriate dust suppression methods during on-site construction activities. Available methods include application of water, soil stabilizers, or vegetation; use of enclosures, covers, silt fences, or wheel washers; and suspension of earth-movement activities during high wind conditions;
- Maintain a speed of less than 15mph with construction equipment on unpaved surfaces as well as utilize fuel with low or ultra-low sulfur content;
- Employ a construction management plan in order to minimize interference with regular motor vehicle traffic;
- Use electricity from power poles instead of generators whenever possible;
- Repair and service construction equipment according to the regular maintenance schedule recommended for each individual equipment type;
- Use low-VOC architectural materials and supplies equipment; and
- Incorporate energy-efficient supplies whenever feasible.

11. Noise minimization measures should be implemented during construction. These measures may include:

- Maintenance of construction equipment and installation of mufflers to reduce noise;
- Time of day restrictions on construction and maintenance activities to eliminate noise during those time of day when it is considered to be most objectionable.

United States Senate
WASHINGTON, DC 20510-2002

June 2, 2005

Mr. Thomas P. Jacobus
General Manager
Department of the Army
Washington Aqueduct
U.S. Army Corps of Engineers, Baltimore District
5900 MacArthur Boulevard, NW
Washington, D.C. 20016

Dear Mr. Jacobus:


We are writing to urge you to approve an extension of at least 45 days of the public comment period on the Draft Environmental Impact Statement (EIS) for the residuals management project at the Washington Aqueduct to provide interested parties with a more reasonable time in which to comment on the document. We also urge you to give full and careful consideration to the recommendations of the Montgomery County Planning Board that the Corps consider piping the residuals to a private industrial site, present a more formal dispersion plan for the trucks, and present detailed quantification of the costs of trucking on Montgomery County.

As we have pointed out in previous correspondence, it is vital to the integrity of the NEPA process that the public and parties that would be impacted by the proposed project be given an adequate and meaningful opportunity to review the project and participate in identifying reasonable alternatives. The DEIS that was released on April 22, 2005 is a four volume document containing more than one thousand pages of information and technical data. In our judgment, and in the opinion of many of the residents who would be affected by the project, the current 45-day period for public comment is inadequate to fully analyze and respond to this voluminous document, the technical aspects of the alternatives identified, and the effects of the proposed action on the local community and the environment. We remain concerned that there may be a fundamental conflict between the deadline imposed by the Federal Facilities Compliance Agreement and the National Environmental Policy Act's public involvement requirements. Moreover, we have been advised by the Concerned Neighbors organization of numerous deficiencies in the DEIS. These include the failure to consider alternatives to the chemical "alum" in the water treatment process, inadequate consideration of air quality impacts of the preferred alternative, as well as inadequate or incomplete information on the trucking impacts identified by the Montgomery County Planning Board.

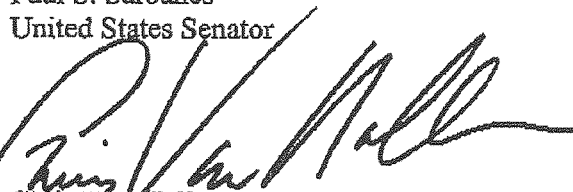
Mr. Thomas P. Jacobus
June 2, 2005
Page 2

Your attention to this matter is greatly appreciated and we look forward to hearing from you.

Sincerely,


Paul S. Sarbanes
United States Senator


Barbara A. Mikulski
United States Senator


Chris Van Hollen
Member of Congress

Congress of the United States

Washington, DC 20510

April 18, 2005

Mr. Thomas P. Jacobus
General Manager
Washington Aqueduct
U.S. Army Corps of Engineers, Baltimore District
5900 MacArthur Boulevard, NW
Washington, DC 20016

Dear Mr. Jacobus:

We are writing to follow up on our previous correspondence regarding the Environmental Impact Study (EIS) process for the water treatment residuals project at the Dalecarlia Reservoir. Residents in the local community continue to express the following concerns:

- The NEPA process requires consultation with and consideration of input from the public. Unfortunately, many residents in the area were only notified that the issue was being considered after completion of both the purpose and needs statement and the scoping process, development of the screening criteria, and the elimination of numerous alternatives.
2. Despite FOIA requests to the Corps from the community, all responsive documents were not provided until March 31, 2005, days before the scheduled release of the DEIS. The community still believes, in fact, that the Corps' response was incomplete and that additional documents should be forthcoming.
 3. The Federal Facilities Compliance Agreement, a contract between the Corps of Engineers and EPA, appears to continue drive the "purpose and need" for this project, rather than the need to find reasonable alternatives to the current practice of disposing of residuals into the Potomac River.
 4. The Corps is required under NEPA to coordinate its environmental analysis of alternatives with other federal, state and local agencies. It is unclear the extent to which this has occurred. We understand that water regionalization discussions are being conducted between Montgomery County and representatives of WASA. These discussions are directly relevant to the disposal options being evaluated as part of this project.
 5. The community has offered a number of alternatives that need to be carefully considered and not rejected under the pressure of a voluntarily imposed timetable. Serious consideration must be given to alternatives that would minimize the impact of the project on local residents.

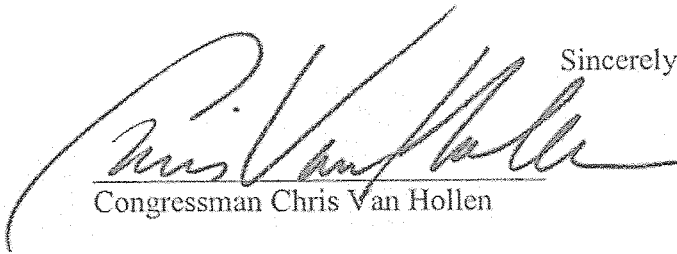
Mr. Thomas P. Jacobus

Page 2

April 18, 2005

Given the magnitude of this project and the long-term impact that any solution will entail, we request that the publication of the DEIS in the Federal Register be deferred until these issues can be considered.

Sincerely,



Congressman Chris Van Hollen



Congresswoman Eleanor Holmes Norton



Senator Barbara A. Mikulski



Senator Paul S. Sarbanes

A summary of major public concern on DEIS alternatives A through E communicated during this process is as follows:

Alternative A—Dewatering at Northwest Dalecarlia Processing Site and Disposal by Monofill

There was significant public concern about removing a 30-acre stand of mature, mixed hardwood forest and replacing it with a residuals monofill with a 20 year life span. Specific issues centered on the visual impact to nearby Maryland residences, operational impacts of light, noise and dust, the loss of biological resources that are currently protected from human activity, and the potential for the water quality in the reservoir to be affected. Some area residents characterized this alternative as creating a permanent impact (clearcutting the forest) for a temporary solution (a monofill with capacity for 20 years of disposal).

From an agency standpoint, the Corps of Engineers Baltimore Division leading the AUES FUDS environmental restoration project expressed concern that portions of the Dalecarlia Reservoir property, including the monofill footprint, fell within an area historically known as "Government Woods". They have reasonable suspicion that this property may have been associated with the AUES's World War One era research and testing activities. This suspicion has led to scheduled testing of portions of the Dalecarlia Reservoir property. This scheduled testing in 2008 and associated remedial actions, if any conflict with the Aqueduct's timetable for FFCA compliance.

Alternative B—Dewatering at Northwest Dalecarlia Processing Site and Disposal by Trucking

Public concern developed focused on the appearance of the processing facilities. Specifically its potential to impact the visual character of the immediate area and to be seen by residents of Maryland's Brookmont neighborhood downgradient of the site's western boundary, residents of Windward and Leeward Place overlooking the site's northern boundary, and users of the portion of the Capital Crescent Trail passing through the Aqueduct's WTP property. Nearby residents have also voiced concern about operational issues of noise, light pollution, and the potential for odors.

Beyond the immediate neighbors, this alternative attracts public concern about truck traffic on area roads, which is viewed as a congestion, pedestrian safety, and residential foundation hazard. Regulatory agencies have not voiced concerns specific to this alternative.

Alternative C—Thickening and Piping to Blue Plains AWWTP

Maryland and DC residents from the neighborhoods surrounding the Dalecarlia Reservoir and WTP have been largely supportive of this alternative because it involves the smallest amount of visibly-observed facility development in this geographic area and does not involve trucks carrying residuals on their area roads, which effort would instead be transferred to I-295 and Southeast D.C. Under this alternative, the potential operational impacts of the residuals processing facility would be transferred to the Blue Plains AWWTP approximately 12 miles away in the opposite corner of the District of Columbia.

Three regional offices of the NPS have expressed significant concern about the pipeline corridor as it passes through the C&O National Historical Park and Georgetown Historic District, and areas adjacent to the Lincoln Memorial, the Franklin Delano Roosevelt Memorial, and Thomas Jefferson Memorial.

The Washington Area Sanitation Authority (DC WASA) evaluated the prospect of hosting the residuals processing facility at their Blue Plains facility. They have determined that all potentially available site space must be reserved for planned facilities to accomplish greater wastewater nutrient removal and store and treat CSOs (see Engineering Feasibility Study Compendium—Volume 4 of the DEIS for more detail on this issue). As a result, they cannot host the Washington Aqueduct's facilities as part of this alternative.

Alternative D—No Action Alternative

A portion of the public dialog has focused on the need for the Washington Aqueduct to change its current and historical practice of Potomac River residuals disposal. There has been some public support for this alternative, with the argument that a new residuals management process creates a set of land-based impacts that are greater than the impacts associated with water-based disposal. Neither the impact balancing that occurred during this NEPA process, nor the strictures of the Clean Water Act support this argument.

From a resource agency perspective, the Washington Aqueduct received the current Permit No. DC 0000019, and entered into an FFCA following 9 years of research and detailed discussion over the need to alter the residual disposal process from river discharge to land application. An extensive administrative record was created by USEPA Region 3 to support this decision. Once made, the FFCA was needed to set forth a timetable for the Washington Aqueduct to meet Permit No. DC 0000019. This permit for all practical purposes precludes continuation of river disposal. The failure to enter into the FFCA would have most likely resulted in USEPA revoking Permit No. DC 0000019, or USEPA entering a unilateral order and schedule.

Alternative E—Dewatering at East Dalecarlia Processing Site and Disposal by Trucking

This alternative is an outcome of the extended public comment period ending in mid-November 2004. It has the benefit of moving the facility further from the Brookmont neighborhood and will have better access to the Dalecarlia Parkway, reducing the local noise from the expected truck traffic. The building would be visible from the Westmoreland neighborhood that faces the reservoir, but it would be in the same sight line as the existing hospital high rise buildings. The topography of the site offers opportunities to minimize the visibility of the structures.

Conclusion

The alternatives screening criteria are linked to the project's purpose and need. Washington Aqueduct developed them subsequent to the issuance of the Notice of Intent.

The production of safe drinking water delivered with one hundred percent reliability to Washington Aqueduct's wholesale customers at a reasonable cost must be maintained during construction and operation of the selected alternative. This is the inherent duty of the Washington Aqueduct management.

The screening criteria were then applied to all of the alternatives — those that were initially developed by Washington Aqueduct staff and consultants and those that were suggested by

the public. Four alternatives met the screening criteria and their effects are evaluated in this DEIS.

A fifth alternative, the "no action" alternative is also included.

While "no action" is an alternative that must be evaluated in any environmental documentation accomplished under the National Environmental Policy Act, it cannot be the selected action in this case. The issuance of NPDES Permit DC 0000019 which itself was evaluated in a public process pursuant to EPA regulations, requires some kind of solids collection and disposal process as an alternate to the current method of flushing them to the Potomac River.

Alternative E—Dewatering at East Dalecarlia Processing Site and Disposal by Trucking is recommended as the Proposed Action for the DEIS because it best meets the purpose and need of the project.

RESOURCE AREAS WITH APPENDIX INFORMATION

- NOISE
- AIR QUALITY
- LAND USE

NOISE

- SUMMARY OF NOISE-MONITORING DATA
- NOISE SURVEY RESULTS
- SUMMARY OF NOISE IMPACTS

Summary of Noise Monitoring Data

Location	Event	Date Time	Duration (min)	Average Noise Level (dBA)	Maximum Noise Level (dBA)	Instantaneous Peak (dBA)	Sources of Noise
Residential Windward Place	Day	7/1/2004					
	1	10:30am	14	38.3	80	114.8	airplanes, truck, insects
	2	1:00pm	15	<40	77.3	113.8	airplanes
Recreational Area Bike Path	3	2:30pm	15	<40	73.3	98.8	airplanes
	1	7/1/2004 11:00am	14	55.6	84.4	117.7	airplanes
	2	1:30pm	15	<40	71.7	97.5	helicopter, airplanes
Roadway Loughboro Road	3	3:00pm	15	<40	78	103.7	airplanes
	1	7/1/2004 12:30pm	14	59.6	85.5	109.7	buses, trucks and motorcycle
	2	2:00pm	15	59.6	84.8	108.6	airplane, school bus, truck buses
Residential Hutchins Place	3	3:29pm	15	64.4	91.7	117.4	cars, trucks, motorcycle, airplane
	1	7/1/2004 5:45pm	15	<40	76.8	97.2	airplanes, helicopter
	2	6:05pm	15	<40	79.6	108.6	airplanes
Residential Windward Place	3	6:25pm	15	<40	73.4	100.1	airplanes, ambulance
	Night	7/2/2004					
	1	12:16am	14	<40	76.7	108.5	A/C system
Roadway Loughboro Road	2	1:15am	15	<40	69.9	97.8	A/C system
	1	7/2/2004 12:45am	15	58.5	86.1	109.5	cars, bus
	2	1:45am	15	<40	72.1	99	cars
Residential Hutchins Place	1	7/2/2004 2:14am	16	<40	72.8	101.6	
	2	2:45am	15	<40	69.9	94.4	car

O. R. GEORGE & ASSOCIATES, INC.

Traffic Engineers – Transportation Planners

10210 Greenbelt Road, Suite 310 • Greenbelt, MD 20706-2218

Tel: (301) 794-7700 Fax: (301) 794-4400

E-Mail: orgassoc@aol.com

July 7, 2004

Raymond C. Porter,
Senior Air Quality Meteorologist
CH2M HILL
25 New Chardon Street
Boston, MA 02114 - 4774

Re: Washington Aqueduct EIS – Noise Monitoring Program

Dear Mr. Porter:

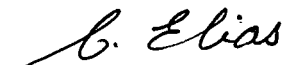
In accordance with our Subcontract Agreement for the referenced project, and our meeting on June 30, 2004, we are pleased to confirm that we have completed the required noise monitoring activities. The surveys were undertaken during favorable weather conditions, and were not adversely impacted by any unexpected situations. The daytime surveys occurred in accordance with the agreed-upon schedule. The nighttime surveys began about forty-five minutes late, as the assigned technician was held up by a major traffic accident. Despite this setback, we were able to complete the two 15-minute intervals at each survey site, as required. We also had no problems in downloading and processing the collected data.

As requested, we are attaching herewith the following:

- a) A revised Noise Survey Schedule which indicates the time periods surveyed and the "event" reference numbers;.
- b) The software printout/results for each survey event. Please note that the last page of each event summary indicates the reasons for any sharp "spikes" in the readings, and the times when these occurred;
- c) A floppy diskette containing Items (a) and (b); and
- d) The assigned notebook containing our field notes.

The noise meter will be delivered to your Herndon Office, as discussed. We trust that the enclosed would satisfy your requirements. Should you have any questions or comments, please let us know. Thank you.

Sincerely,
O. R. GEORGE & ASSOCIATES, INC.



Cullen E. Elias
Vice President

CEE/mvd

Enclosure: As noted.

cc: Jed Campbell (CH2M Hill)

Noise Survey Schedule
Dalecarlia and Georgetown Reservoirs

Survey Time	Residential Area Dalecarlia Reservoir	Recreational Trail Dalecarlia Reservoir	Sibley Hospital Dalecarlia Reservoir	Georgetown Reservoir	Little Falls Rd Construction Area
Daytime Sampling Activities (Thursday, July 1, 2004)					
10:30 - 10:45	Event # 1				
11:00 - 11:15		Event # 2			
11:30 - 12:00					Events # 3 - 6
12:30 - 12:45			Event # 7		
13:00 - 13:15	Event # 8				
13:30 - 13:45		Event # 9			
14:00 - 14:15			Event # 10		
14:30 - 14:45	Event # 11				
15:00 - 15:15		Event # 12			
15:30 - 15:45			Event # 13		
17:45 - 18:00				Event # 14	
18:05 - 18:20				Event # 15	
18:25 - 18:40				Event # 16	
Nighttime Sampling Activities (Friday, July 2, 2004)					
00:15 - 00:30	Events # 17 18				
00:45 - 01:00			Event # 19		
01:15 - 01:30	Event # 20				
01:45 - 02:00			Event # 21		
02:15 - 02:30				Event # 22	
02:45 - 03:00				Event # 23	

Projected Dose in Increments of 0:01:00 (h:m:s)

Dosimeter	+0 Incr.	+1 Incr.	+2 Incr.	+3 Incr.	+4 Incr.
#1 - 0:00:00		0.00	0.00	0.00	0.00
#1 - 0:05:00	0.00	0.00	0.00	0.00	0.00
#1 - 0:10:00	0.00	0.00	0.00	0.00	0.00
#1 - 0:15:00	0.00	0.00	0.00	0.00	0.01
#1 - 0:20:00	0.01	0.01	0.01	0.01	0.01
#1 - 0:25:00	0.01	0.01	0.01	0.01	0.01
#1 - 0:30:00	0.01	0.01	0.01	0.01	0.01
#1 - 0:35:00	0.01	0.01	0.01	0.01	0.01
#1 - 0:40:00	0.01	0.01	0.01	0.01	0.01
#1 - 0:45:00	0.01	0.01	0.01	0.01	0.01
#1 - 0:50:00	0.01	0.01	0.01	0.01	0.01
#1 - 0:55:00	0.02	0.02	0.02	0.02	0.02
#1 - 1:00:00	0.02	0.02	0.02	0.02	0.02
#1 - 1:05:00	0.02	0.02	0.02	0.02	0.02
#1 - 1:10:00	0.02	0.02	0.02	0.02	0.02
#1 - 1:15:00	0.02	0.02	0.02	0.02	0.02
#1 - 1:20:00	0.02	0.02	0.02	0.02	0.02
#1 - 1:25:00	0.02	0.02	0.02	0.02	0.02
#1 - 1:30:00	0.02	0.02	0.03	0.03	0.03
#1 - 1:35:00	0.03	0.03	0.03	0.03	0.03
#1 - 1:40:00	0.03	0.03	0.03	0.03	0.03
#1 - 1:45:00	0.03	0.03	0.03	0.03	0.03
#1 - 1:50:00	0.03	0.03	0.03	0.03	0.03
#1 - 1:55:00	0.03	0.03	0.03	0.03	0.03
#1 - 2:00:00	0.03	0.03	0.03	0.03	0.03
#1 - 2:05:00	0.03	0.03	0.03	0.04	0.04
#1 - 2:10:00	0.04	0.04	0.04	0.04	0.04
#1 - 2:15:00	0.04	0.04	0.04	0.04	0.04
#1 - 2:20:00	0.04	0.04	0.04	0.04	0.04
#1 - 2:25:00	0.04	0.04	0.04	0.04	0.04
#1 - 2:30:00	0.04	0.04	0.04	0.04	0.04
#1 - 2:35:00	0.04	0.04	0.04	0.04	0.04
#1 - 2:40:00	0.04	0.04	0.04	0.04	0.04
#1 - 2:45:00	0.05	0.05	0.05	0.05	0.05
#1 - 2:50:00	0.05	0.05	0.05	0.05	0.05
#1 - 2:55:00	0.05	0.05	0.05	0.05	0.05
#1 - 3:00:00	0.05	0.05	0.05	0.05	0.05
#1 - 3:05:00	0.05	0.05	0.05	0.05	0.05
#1 - 3:10:00	0.05	0.05	0.05	0.05	0.05
#1 - 3:15:00	0.05	0.05	0.05	0.05	0.05
#1 - 3:20:00	0.05	0.06	0.06	0.06	0.06
#1 - 3:25:00	0.06	0.06	0.06	0.06	0.06
#1 - 3:30:00	0.06	0.06	0.06	0.06	0.06
#1 - 3:35:00	0.06	0.06	0.06	0.06	0.06

Projected Dose in Increments of 0:01:00 (h:m:s)

Dosimeter	+0 Incr.	+1 Incr.	+2 Incr.	+3 Incr.	+4 Incr.
#1 - 3:40:00	0.06	0.06	0.06	0.06	0.06
#1 - 3:45:00	0.06	0.06	0.06	0.06	0.06
#1 - 3:50:00	0.06	0.06	0.06	0.06	0.06
#1 - 3:55:00	0.06	0.06	0.07	0.07	0.07
#1 - 4:00:00	0.07	0.07	0.07	0.07	0.07
#1 - 4:05:00	0.07	0.07	0.07	0.07	0.07
#1 - 4:10:00	0.07	0.07	0.07	0.07	0.07
#1 - 4:15:00	0.07	0.07	0.07	0.07	0.07
#1 - 4:20:00	0.07	0.07	0.07	0.07	0.07
#1 - 4:25:00	0.07	0.07	0.07	0.07	0.07
#1 - 4:30:00	0.07	0.07	0.07	0.07	0.08
#1 - 4:35:00	0.08	0.08	0.08	0.08	0.08
#1 - 4:40:00	0.08	0.08	0.08	0.08	0.08
#1 - 4:45:00	0.08	0.08	0.08	0.08	0.08
#1 - 4:50:00	0.08	0.08	0.08	0.08	0.08
#1 - 4:55:00	0.08	0.08	0.08	0.08	0.08
#1 - 5:00:00	0.08	0.08	0.08	0.08	0.08
#1 - 5:05:00	0.08	0.08	0.08	0.08	0.08
#1 - 5:10:00	0.09	0.09	0.09	0.09	0.09
#1 - 5:15:00	0.09	0.09	0.09	0.09	0.09
#1 - 5:20:00	0.09	0.09	0.09	0.09	0.09
#1 - 5:25:00	0.09	0.09	0.09	0.09	0.09
#1 - 5:30:00	0.09	0.09	0.09	0.09	0.09
#1 - 5:35:00	0.09	0.09	0.09	0.09	0.09
#1 - 5:40:00	0.09	0.09	0.09	0.09	0.09
#1 - 5:45:00	0.09	0.09	0.10	0.10	0.10
#1 - 5:50:00	0.10	0.10	0.10	0.10	0.10
#1 - 5:55:00	0.10	0.10	0.10	0.10	0.10
#1 - 6:00:00	0.10	0.10	0.10	0.10	0.10
#1 - 6:05:00	0.10	0.10	0.10	0.10	0.10
#1 - 6:10:00	0.10	0.10	0.10	0.10	0.10
#1 - 6:15:00	0.10	0.10	0.10	0.10	0.10
#1 - 6:20:00	0.10	0.10	0.10	0.11	0.11
#1 - 6:25:00	0.11	0.11	0.11	0.11	0.11
#1 - 6:30:00	0.11	0.11	0.11	0.11	0.11
#1 - 6:35:00	0.11	0.11	0.11	0.11	0.11
#1 - 6:40:00	0.11	0.11	0.11	0.11	0.11
#1 - 6:45:00	0.11	0.11	0.11	0.11	0.11
#1 - 6:50:00	0.11	0.11	0.11	0.11	0.11
#1 - 6:55:00	0.11	0.11	0.11	0.11	0.11
#1 - 7:00:00	0.12	0.12	0.12	0.12	0.12
#1 - 7:05:00	0.12	0.12	0.12	0.12	0.12
#1 - 7:10:00	0.12	0.12	0.12	0.12	0.12
#1 - 7:15:00	0.12	0.12	0.12	0.12	0.12

Projected Dose in Increments of 0:01:00 (h:m:s)

Dosimeter	+0 Incr.	+1 Incr.	+2 Incr.	+3 Incr.	+4 Incr.
#1 - 7:20:00	0.12	0.12	0.12	0.12	0.12
#1 - 7:25:00	0.12	0.12	0.12	0.12	0.12
#1 - 7:30:00	0.12	0.12	0.12	0.12	0.12
#1 - 7:35:00	0.12	0.13	0.13	0.13	0.13
#1 - 7:40:00	0.13	0.13	0.13	0.13	0.13
#1 - 7:45:00	0.13	0.13	0.13	0.13	0.13
#1 - 7:50:00	0.13	0.13	0.13	0.13	0.13
#1 - 7:55:00	0.13	0.13	0.13	0.13	0.13
#1 - 8:00:00	0.13				
#2 - 0:00:00		0.00	0.00	0.00	0.00
#2 - 0:05:00	0.00	0.00	0.00	0.00	0.00
#2 - 0:10:00	0.00	0.00	0.00	0.00	0.00
#2 - 0:15:00	0.00	0.00	0.00	0.00	0.00
#2 - 0:20:00	0.00	0.00	0.00	0.00	0.00
#2 - 0:25:00	0.00	0.00	0.00	0.00	0.00
#2 - 0:30:00	0.00	0.00	0.00	0.00	0.00
#2 - 0:35:00	0.00	0.00	0.00	0.00	0.00
#2 - 0:40:00	0.00	0.00	0.00	0.00	0.00
#2 - 0:45:00	0.00	0.00	0.00	0.00	0.00
#2 - 0:50:00	0.00	0.00	0.00	0.00	0.00
#2 - 0:55:00	0.00	0.00	0.00	0.00	0.00
#2 - 1:00:00	0.00	0.00	0.00	0.00	0.00
#2 - 1:05:00	0.00	0.00	0.00	0.00	0.00
#2 - 1:10:00	0.00	0.00	0.00	0.01	0.01
#2 - 1:15:00	0.01	0.01	0.01	0.01	0.01
#2 - 1:20:00	0.01	0.01	0.01	0.01	0.01
#2 - 1:25:00	0.01	0.01	0.01	0.01	0.01
#2 - 1:30:00	0.01	0.01	0.01	0.01	0.01
#2 - 1:35:00	0.01	0.01	0.01	0.01	0.01
#2 - 1:40:00	0.01	0.01	0.01	0.01	0.01
#2 - 1:45:00	0.01	0.01	0.01	0.01	0.01
#2 - 1:50:00	0.01	0.01	0.01	0.01	0.01
#2 - 1:55:00	0.01	0.01	0.01	0.01	0.01
#2 - 2:00:00	0.01	0.01	0.01	0.01	0.01
#2 - 2:05:00	0.01	0.01	0.01	0.01	0.01
#2 - 2:10:00	0.01	0.01	0.01	0.01	0.01
#2 - 2:15:00	0.01	0.01	0.01	0.01	0.01
#2 - 2:20:00	0.01	0.01	0.01	0.01	0.01
#2 - 2:25:00	0.01	0.01	0.01	0.01	0.01
#2 - 2:30:00	0.01	0.01	0.01	0.01	0.01
#2 - 2:35:00	0.01	0.01	0.01	0.01	0.01
#2 - 2:40:00	0.01	0.01	0.01	0.01	0.01
#2 - 2:45:00	0.01	0.01	0.01	0.01	0.01

Projected Dose in Increments of 0:01:00 (h:m:s)

Dosimeter	+0 Incr.	+1 Incr.	+2 Incr.	+3 Incr.	+4 Incr.
#2 - 2:50:00	0.01	0.01	0.01	0.01	0.01
#2 - 2:55:00	0.01	0.01	0.01	0.01	0.01
#2 - 3:00:00	0.01	0.01	0.01	0.01	0.01
#2 - 3:05:00	0.01	0.01	0.01	0.01	0.01
#2 - 3:10:00	0.01	0.01	0.01	0.01	0.01
#2 - 3:15:00	0.01	0.01	0.01	0.01	0.01
#2 - 3:20:00	0.01	0.01	0.01	0.01	0.01
#2 - 3:25:00	0.01	0.01	0.01	0.01	0.01
#2 - 3:30:00	0.01	0.01	0.01	0.01	0.01
#2 - 3:35:00	0.01	0.01	0.01	0.01	0.02
#2 - 3:40:00	0.02	0.02	0.02	0.02	0.02
#2 - 3:45:00	0.02	0.02	0.02	0.02	0.02
#2 - 3:50:00	0.02	0.02	0.02	0.02	0.02
#2 - 3:55:00	0.02	0.02	0.02	0.02	0.02
#2 - 4:00:00	0.02	0.02	0.02	0.02	0.02
#2 - 4:05:00	0.02	0.02	0.02	0.02	0.02
#2 - 4:10:00	0.02	0.02	0.02	0.02	0.02
#2 - 4:15:00	0.02	0.02	0.02	0.02	0.02
#2 - 4:20:00	0.02	0.02	0.02	0.02	0.02
#2 - 4:25:00	0.02	0.02	0.02	0.02	0.02
#2 - 4:30:00	0.02	0.02	0.02	0.02	0.02
#2 - 4:35:00	0.02	0.02	0.02	0.02	0.02
#2 - 4:40:00	0.02	0.02	0.02	0.02	0.02
#2 - 4:45:00	0.02	0.02	0.02	0.02	0.02
#2 - 4:50:00	0.02	0.02	0.02	0.02	0.02
#2 - 4:55:00	0.02	0.02	0.02	0.02	0.02
#2 - 5:00:00	0.02	0.02	0.02	0.02	0.02
#2 - 5:05:00	0.02	0.02	0.02	0.02	0.02
#2 - 5:10:00	0.02	0.02	0.02	0.02	0.02
#2 - 5:15:00	0.02	0.02	0.02	0.02	0.02
#2 - 5:20:00	0.02	0.02	0.02	0.02	0.02
#2 - 5:25:00	0.02	0.02	0.02	0.02	0.02
#2 - 5:30:00	0.02	0.02	0.02	0.02	0.02
#2 - 5:35:00	0.02	0.02	0.02	0.02	0.02
#2 - 5:40:00	0.02	0.02	0.02	0.02	0.02
#2 - 5:45:00	0.02	0.02	0.02	0.02	0.02
#2 - 5:50:00	0.02	0.02	0.02	0.02	0.02
#2 - 5:55:00	0.02	0.02	0.02	0.02	0.02
#2 - 6:00:00	0.02	0.02	0.02	0.02	0.02
#2 - 6:05:00	0.03	0.03	0.03	0.03	0.03
#2 - 6:10:00	0.03	0.03	0.03	0.03	0.03
#2 - 6:15:00	0.03	0.03	0.03	0.03	0.03
#2 - 6:20:00	0.03	0.03	0.03	0.03	0.03
#2 - 6:25:00	0.03	0.03	0.03	0.03	0.03

Projected Dose in Increments of 0:01:00 (h:m:s)

Dosimeter	+0 Incr.	+1 Incr.	+2 Incr.	+3 Incr.	+4 Incr.
#2 - 6:30:00	0.03	0.03	0.03	0.03	0.03
#2 - 6:35:00	0.03	0.03	0.03	0.03	0.03
#2 - 6:40:00	0.03	0.03	0.03	0.03	0.03
#2 - 6:45:00	0.03	0.03	0.03	0.03	0.03
#2 - 6:50:00	0.03	0.03	0.03	0.03	0.03
#2 - 6:55:00	0.03	0.03	0.03	0.03	0.03
#2 - 7:00:00	0.03	0.03	0.03	0.03	0.03
#2 - 7:05:00	0.03	0.03	0.03	0.03	0.03
#2 - 7:10:00	0.03	0.03	0.03	0.03	0.03
#2 - 7:15:00	0.03	0.03	0.03	0.03	0.03
#2 - 7:20:00	0.03	0.03	0.03	0.03	0.03
#2 - 7:25:00	0.03	0.03	0.03	0.03	0.03
#2 - 7:30:00	0.03	0.03	0.03	0.03	0.03
#2 - 7:35:00	0.03	0.03	0.03	0.03	0.03
#2 - 7:40:00	0.03	0.03	0.03	0.03	0.03
#2 - 7:45:00	0.03	0.03	0.03	0.03	0.03
#2 - 7:50:00	0.03	0.03	0.03	0.03	0.03
#2 - 7:55:00	0.03	0.03	0.03	0.03	0.03
#2 - 8:00:00	0.03				
#3 - 0:00:00		0.00	0.00	0.00	0.00
#3 - 0:05:00	0.00	0.00	0.01	0.01	0.01
#3 - 0:10:00	0.01	0.01	0.01	0.01	0.01
#3 - 0:15:00	0.01	0.01	0.01	0.01	0.01
#3 - 0:20:00	0.02	0.02	0.02	0.02	0.02
#3 - 0:25:00	0.02	0.02	0.02	0.02	0.02
#3 - 0:30:00	0.02	0.02	0.03	0.03	0.03
#3 - 0:35:00	0.03	0.03	0.03	0.03	0.03
#3 - 0:40:00	0.03	0.03	0.03	0.03	0.03
#3 - 0:45:00	0.04	0.04	0.04	0.04	0.04
#3 - 0:50:00	0.04	0.04	0.04	0.04	0.04
#3 - 0:55:00	0.04	0.04	0.04	0.05	0.05
#3 - 1:00:00	0.05	0.05	0.05	0.05	0.05
#3 - 1:05:00	0.05	0.05	0.05	0.05	0.05
#3 - 1:10:00	0.06	0.06	0.06	0.06	0.06
#3 - 1:15:00	0.06	0.06	0.06	0.06	0.06
#3 - 1:20:00	0.06	0.06	0.06	0.07	0.07
#3 - 1:25:00	0.07	0.07	0.07	0.07	0.07
#3 - 1:30:00	0.07	0.07	0.07	0.07	0.07
#3 - 1:35:00	0.07	0.08	0.08	0.08	0.08
#3 - 1:40:00	0.08	0.08	0.08	0.08	0.08
#3 - 1:45:00	0.08	0.08	0.08	0.09	0.09
#3 - 1:50:00	0.09	0.09	0.09	0.09	0.09
#3 - 1:55:00	0.09	0.09	0.09	0.09	0.09

Projected Dose in Increments of 0:01:00 (h:m:s)

Dosimeter	+0 Incr.	+1 Incr.	+2 Incr.	+3 Incr.	+4 Incr.
#3 - 2:00:00	0.09	0.10	0.10	0.10	0.10
#3 - 2:05:00	0.10	0.10	0.10	0.10	0.10
#3 - 2:10:00	0.10	0.10	0.10	0.10	0.11
#3 - 2:15:00	0.11	0.11	0.11	0.11	0.11
#3 - 2:20:00	0.11	0.11	0.11	0.11	0.11
#3 - 2:25:00	0.11	0.12	0.12	0.12	0.12
#3 - 2:30:00	0.12	0.12	0.12	0.12	0.12
#3 - 2:35:00	0.12	0.12	0.12	0.12	0.13
#3 - 2:40:00	0.13	0.13	0.13	0.13	0.13
#3 - 2:45:00	0.13	0.13	0.13	0.13	0.13
#3 - 2:50:00	0.13	0.13	0.14	0.14	0.14
#3 - 2:55:00	0.14	0.14	0.14	0.14	0.14
#3 - 3:00:00	0.14	0.14	0.14	0.14	0.15
#3 - 3:05:00	0.15	0.15	0.15	0.15	0.15
#3 - 3:10:00	0.15	0.15	0.15	0.15	0.15
#3 - 3:15:00	0.15	0.15	0.16	0.16	0.16
#3 - 3:20:00	0.16	0.16	0.16	0.16	0.16
#3 - 3:25:00	0.16	0.16	0.16	0.16	0.16
#3 - 3:30:00	0.17	0.17	0.17	0.17	0.17
#3 - 3:35:00	0.17	0.17	0.17	0.17	0.17
#3 - 3:40:00	0.17	0.17	0.18	0.18	0.18
#3 - 3:45:00	0.18	0.18	0.18	0.18	0.18
#3 - 3:50:00	0.18	0.18	0.18	0.18	0.18
#3 - 3:55:00	0.19	0.19	0.19	0.19	0.19
#3 - 4:00:00	0.19	0.19	0.19	0.19	0.19
#3 - 4:05:00	0.19	0.19	0.19	0.20	0.20
#3 - 4:10:00	0.20	0.20	0.20	0.20	0.20
#3 - 4:15:00	0.20	0.20	0.20	0.20	0.20
#3 - 4:20:00	0.21	0.21	0.21	0.21	0.21
#3 - 4:25:00	0.21	0.21	0.21	0.21	0.21
#3 - 4:30:00	0.21	0.21	0.21	0.22	0.22
#3 - 4:35:00	0.22	0.22	0.22	0.22	0.22
#3 - 4:40:00	0.22	0.22	0.22	0.22	0.22
#3 - 4:45:00	0.22	0.23	0.23	0.23	0.23
#3 - 4:50:00	0.23	0.23	0.23	0.23	0.23
#3 - 4:55:00	0.23	0.23	0.23	0.23	0.24
#3 - 5:00:00	0.24	0.24	0.24	0.24	0.24
#3 - 5:05:00	0.24	0.24	0.24	0.24	0.24
#3 - 5:10:00	0.24	0.25	0.25	0.25	0.25
#3 - 5:15:00	0.25	0.25	0.25	0.25	0.25
#3 - 5:20:00	0.25	0.25	0.25	0.25	0.26
#3 - 5:25:00	0.26	0.26	0.26	0.26	0.26
#3 - 5:30:00	0.26	0.26	0.26	0.26	0.26
#3 - 5:35:00	0.26	0.26	0.27	0.27	0.27

Projected Dose in Increments of 0:01:00 (h:m:s)

Dosimeter	+0 Incr.	+1 Incr.	+2 Incr.	+3 Incr.	+4 Incr.
#3 - 5:40:00	0.27	0.27	0.27	0.27	0.27
#3 - 5:45:00	0.27	0.27	0.27	0.27	0.28
#3 - 5:50:00	0.28	0.28	0.28	0.28	0.28
#3 - 5:55:00	0.28	0.28	0.28	0.28	0.28
#3 - 6:00:00	0.28	0.28	0.29	0.29	0.29
#3 - 6:05:00	0.29	0.29	0.29	0.29	0.29
#3 - 6:10:00	0.29	0.29	0.29	0.29	0.29
#3 - 6:15:00	0.30	0.30	0.30	0.30	0.30
#3 - 6:20:00	0.30	0.30	0.30	0.30	0.30
#3 - 6:25:00	0.30	0.30	0.31	0.31	0.31
#3 - 6:30:00	0.31	0.31	0.31	0.31	0.31
#3 - 6:35:00	0.31	0.31	0.31	0.31	0.31
#3 - 6:40:00	0.32	0.32	0.32	0.32	0.32
#3 - 6:45:00	0.32	0.32	0.32	0.32	0.32
#3 - 6:50:00	0.32	0.32	0.32	0.33	0.33
#3 - 6:55:00	0.33	0.33	0.33	0.33	0.33
#3 - 7:00:00	0.33	0.33	0.33	0.33	0.33
#3 - 7:05:00	0.34	0.34	0.34	0.34	0.34
#3 - 7:10:00	0.34	0.34	0.34	0.34	0.34
#3 - 7:15:00	0.34	0.34	0.34	0.35	0.35
#3 - 7:20:00	0.35	0.35	0.35	0.35	0.35
#3 - 7:25:00	0.35	0.35	0.35	0.35	0.35
#3 - 7:30:00	0.35	0.36	0.36	0.36	0.36
#3 - 7:35:00	0.36	0.36	0.36	0.36	0.36
#3 - 7:40:00	0.36	0.36	0.36	0.37	0.37
#3 - 7:45:00	0.37	0.37	0.37	0.37	0.37
#3 - 7:50:00	0.37	0.37	0.37	0.37	0.37
#3 - 7:55:00	0.37	0.38	0.38	0.38	0.38
#3 - 8:00:00	0.38				

Projected TWA in Increments of 0:01:00 (h:m:s)

Dosimeter	+0 Incr.	+1 Incr.	+2 Incr.	+3 Incr.	+4 Incr.
#1 - 0:00:00		0.00	3.02	5.95	8.02
#1 - 0:05:00	9.63	10.95	12.06	13.02	13.87
#1 - 0:10:00	14.63	15.32	15.95	16.53	17.06
#1 - 0:15:00	17.56	18.02	18.46	18.87	19.26
#1 - 0:20:00	19.63	19.98	20.32	20.64	20.95
#1 - 0:25:00	21.24	21.53	21.80	22.06	22.31
#1 - 0:30:00	22.56	22.79	23.02	23.24	23.46
#1 - 0:35:00	23.67	23.87	24.07	24.26	24.45
#1 - 0:40:00	24.63	24.81	24.98	25.15	25.32
#1 - 0:45:00	25.48	25.64	25.80	25.95	26.10
#1 - 0:50:00	26.24	26.38	26.53	26.66	26.80
#1 - 0:55:00	26.93	27.06	27.19	27.31	27.44
#1 - 1:00:00	27.56	27.68	27.79	27.91	28.02
#1 - 1:05:00	28.13	28.24	28.35	28.46	28.57
#1 - 1:10:00	28.67	28.77	28.87	28.97	29.07
#1 - 1:15:00	29.17	29.26	29.36	29.45	29.54
#1 - 1:20:00	29.63	29.72	29.81	29.90	29.98
#1 - 1:25:00	30.07	30.15	30.24	30.32	30.40
#1 - 1:30:00	30.48	30.56	30.64	30.72	30.80
#1 - 1:35:00	30.87	30.95	31.02	31.10	31.17
#1 - 1:40:00	31.24	31.31	31.38	31.46	31.53
#1 - 1:45:00	31.59	31.66	31.73	31.80	31.86
#1 - 1:50:00	31.93	31.99	32.06	32.12	32.19
#1 - 1:55:00	32.25	32.31	32.37	32.44	32.50
#1 - 2:00:00	32.56	32.62	32.68	32.74	32.79
#1 - 2:05:00	32.85	32.91	32.97	33.02	33.08
#1 - 2:10:00	33.13	33.19	33.24	33.30	33.35
#1 - 2:15:00	33.41	33.46	33.51	33.57	33.62
#1 - 2:20:00	33.67	33.72	33.77	33.82	33.87
#1 - 2:25:00	33.92	33.97	34.02	34.07	34.12
#1 - 2:30:00	34.17	34.21	34.26	34.31	34.36
#1 - 2:35:00	34.40	34.45	34.50	34.54	34.59
#1 - 2:40:00	34.63	34.68	34.72	34.77	34.81
#1 - 2:45:00	34.85	34.90	34.94	34.98	35.03
#1 - 2:50:00	35.07	35.11	35.15	35.20	35.24
#1 - 2:55:00	35.28	35.32	35.36	35.40	35.44
#1 - 3:00:00	35.48	35.52	35.56	35.60	35.64
#1 - 3:05:00	35.68	35.72	35.76	35.80	35.83
#1 - 3:10:00	35.87	35.91	35.95	35.99	36.02
#1 - 3:15:00	36.06	36.10	36.13	36.17	36.21
#1 - 3:20:00	36.24	36.28	36.31	36.35	36.38
#1 - 3:25:00	36.42	36.46	36.49	36.53	36.56
#1 - 3:30:00	36.59	36.63	36.66	36.70	36.73
#1 - 3:35:00	36.76	36.80	36.83	36.86	36.90

Projected TWA in Increments of 0:01:00 (h:m:s)

Dosimeter	+0 Incr.	+1 Incr.	+2 Incr.	+3 Incr.	+4 Incr.
#1 - 3:40:00	36.93	36.96	36.99	37.03	37.06
#1 - 3:45:00	37.09	37.12	37.16	37.19	37.22
#1 - 3:50:00	37.25	37.28	37.31	37.34	37.37
#1 - 3:55:00	37.41	37.44	37.47	37.50	37.53
#1 - 4:00:00	37.56	37.59	37.62	37.65	37.68
#1 - 4:05:00	37.71	37.74	37.76	37.79	37.82
#1 - 4:10:00	37.85	37.88	37.91	37.94	37.97
#1 - 4:15:00	37.99	38.02	38.05	38.08	38.11
#1 - 4:20:00	38.13	38.16	38.19	38.22	38.24
#1 - 4:25:00	38.27	38.30	38.33	38.35	38.38
#1 - 4:30:00	38.41	38.43	38.46	38.49	38.51
#1 - 4:35:00	38.54	38.57	38.59	38.62	38.64
#1 - 4:40:00	38.67	38.69	38.72	38.75	38.77
#1 - 4:45:00	38.80	38.82	38.85	38.87	38.90
#1 - 4:50:00	38.92	38.95	38.97	39.00	39.02
#1 - 4:55:00	39.05	39.07	39.09	39.12	39.14
#1 - 5:00:00	39.17	39.19	39.21	39.24	39.26
#1 - 5:05:00	39.29	39.31	39.33	39.36	39.38
#1 - 5:10:00	39.40	39.43	39.45	39.47	39.50
#1 - 5:15:00	39.52	39.54	39.56	39.59	39.61
#1 - 5:20:00	39.63	39.65	39.68	39.70	39.72
#1 - 5:25:00	39.74	39.77	39.79	39.81	39.83
#1 - 5:30:00	39.85	39.88	39.90	39.92	39.94
#1 - 5:35:00	39.96	39.98	40.01	40.03	40.05
#1 - 5:40:00	40.07	40.09	40.11	40.13	40.15
#1 - 5:45:00	40.18	40.20	40.22	40.24	40.26
#1 - 5:50:00	40.28	40.30	40.32	40.34	40.36
#1 - 5:55:00	40.38	40.40	40.42	40.44	40.46
#1 - 6:00:00	40.48	40.50	40.52	40.54	40.56
#1 - 6:05:00	40.58	40.60	40.62	40.64	40.66
#1 - 6:10:00	40.68	40.70	40.72	40.74	40.76
#1 - 6:15:00	40.78	40.80	40.81	40.83	40.85
#1 - 6:20:00	40.87	40.89	40.91	40.93	40.95
#1 - 6:25:00	40.97	40.99	41.00	41.02	41.04
#1 - 6:30:00	41.06	41.08	41.10	41.11	41.13
#1 - 6:35:00	41.15	41.17	41.19	41.21	41.22
#1 - 6:40:00	41.24	41.26	41.28	41.30	41.31
#1 - 6:45:00	41.33	41.35	41.37	41.38	41.40
#1 - 6:50:00	41.42	41.44	41.46	41.47	41.49
#1 - 6:55:00	41.51	41.53	41.54	41.56	41.58
#1 - 7:00:00	41.59	41.61	41.63	41.65	41.66
#1 - 7:05:00	41.68	41.70	41.71	41.73	41.75
#1 - 7:10:00	41.76	41.78	41.80	41.81	41.83
#1 - 7:15:00	41.85	41.86	41.88	41.90	41.91

Projected TWA in Increments of 0:01:00 (h:m:s)

Dosimeter	+0 Incr.	+1 Incr.	+2 Incr.	+3 Incr.	+4 Incr.
#1 - 7:20:00	41.93	41.95	41.96	41.98	41.99
#1 - 7:25:00	42.01	42.03	42.04	42.06	42.08
#1 - 7:30:00	42.09	42.11	42.12	42.14	42.16
#1 - 7:35:00	42.17	42.19	42.20	42.22	42.23
#1 - 7:40:00	42.25	42.27	42.28	42.30	42.31
#1 - 7:45:00	42.33	42.34	42.36	42.37	42.39
#1 - 7:50:00	42.41	42.42	42.44	42.45	42.47
#1 - 7:55:00	42.48	42.50	42.51	42.53	42.54
#1 - 8:00:00	42.56				
#2 - 0:00:00		0.00	0.00	0.00	0.00
#2 - 0:05:00	0.00	1.25	2.36	3.32	4.17
#2 - 0:10:00	4.93	5.62	6.25	6.83	7.36
#2 - 0:15:00	7.86	8.32	8.76	9.17	9.56
#2 - 0:20:00	9.93	10.29	10.62	10.94	11.25
#2 - 0:25:00	11.54	11.83	12.10	12.36	12.61
#2 - 0:30:00	12.86	13.09	13.32	13.55	13.76
#2 - 0:35:00	13.97	14.17	14.37	14.56	14.75
#2 - 0:40:00	14.93	15.11	15.29	15.45	15.62
#2 - 0:45:00	15.78	15.94	16.10	16.25	16.40
#2 - 0:50:00	16.54	16.69	16.83	16.96	17.10
#2 - 0:55:00	17.23	17.36	17.49	17.61	17.74
#2 - 1:00:00	17.86	17.98	18.09	18.21	18.32
#2 - 1:05:00	18.44	18.55	18.65	18.76	18.87
#2 - 1:10:00	18.97	19.07	19.17	19.27	19.37
#2 - 1:15:00	19.47	19.56	19.66	19.75	19.84
#2 - 1:20:00	19.93	20.02	20.11	20.20	20.29
#2 - 1:25:00	20.37	20.45	20.54	20.62	20.70
#2 - 1:30:00	20.78	20.86	20.94	21.02	21.10
#2 - 1:35:00	21.17	21.25	21.32	21.40	21.47
#2 - 1:40:00	21.54	21.61	21.69	21.76	21.83
#2 - 1:45:00	21.89	21.96	22.03	22.10	22.16
#2 - 1:50:00	22.23	22.30	22.36	22.42	22.49
#2 - 1:55:00	22.55	22.61	22.68	22.74	22.80
#2 - 2:00:00	22.86	22.92	22.98	23.04	23.09
#2 - 2:05:00	23.15	23.21	23.27	23.32	23.38
#2 - 2:10:00	23.44	23.49	23.55	23.60	23.65
#2 - 2:15:00	23.71	23.76	23.81	23.87	23.92
#2 - 2:20:00	23.97	24.02	24.07	24.12	24.17
#2 - 2:25:00	24.22	24.27	24.32	24.37	24.42
#2 - 2:30:00	24.47	24.52	24.56	24.61	24.66
#2 - 2:35:00	24.70	24.75	24.80	24.84	24.89
#2 - 2:40:00	24.93	24.98	25.02	25.07	25.11
#2 - 2:45:00	25.16	25.20	25.24	25.29	25.33

Projected TWA in Increments of 0:01:00 (h:m:s)

Dosimeter	+0 Incr.	+1 Incr.	+2 Incr.	+3 Incr.	+4 Incr.
#2 - 2:50:00	25.37	25.41	25.45	25.50	25.54
#2 - 2:55:00	25.58	25.62	25.66	25.70	25.74
#2 - 3:00:00	25.78	25.82	25.86	25.90	25.94
#2 - 3:05:00	25.98	26.02	26.06	26.10	26.13
#2 - 3:10:00	26.17	26.21	26.25	26.29	26.32
#2 - 3:15:00	26.36	26.40	26.43	26.47	26.51
#2 - 3:20:00	26.54	26.58	26.61	26.65	26.69
#2 - 3:25:00	26.72	26.76	26.79	26.83	26.86
#2 - 3:30:00	26.89	26.93	26.96	27.00	27.03
#2 - 3:35:00	27.06	27.10	27.13	27.16	27.20
#2 - 3:40:00	27.23	27.26	27.30	27.33	27.36
#2 - 3:45:00	27.39	27.42	27.46	27.49	27.52
#2 - 3:50:00	27.55	27.58	27.61	27.64	27.68
#2 - 3:55:00	27.71	27.74	27.77	27.80	27.83
#2 - 4:00:00	27.86	27.89	27.92	27.95	27.98
#2 - 4:05:00	28.01	28.04	28.07	28.09	28.12
#2 - 4:10:00	28.15	28.18	28.21	28.24	28.27
#2 - 4:15:00	28.30	28.32	28.35	28.38	28.41
#2 - 4:20:00	28.44	28.46	28.49	28.52	28.55
#2 - 4:25:00	28.57	28.60	28.63	28.65	28.68
#2 - 4:30:00	28.71	28.73	28.76	28.79	28.81
#2 - 4:35:00	28.84	28.87	28.89	28.92	28.94
#2 - 4:40:00	28.97	29.00	29.02	29.05	29.07
#2 - 4:45:00	29.10	29.12	29.15	29.17	29.20
#2 - 4:50:00	29.22	29.25	29.27	29.30	29.32
#2 - 4:55:00	29.35	29.37	29.40	29.42	29.44
#2 - 5:00:00	29.47	29.49	29.52	29.54	29.56
#2 - 5:05:00	29.59	29.61	29.63	29.66	29.68
#2 - 5:10:00	29.70	29.73	29.75	29.77	29.80
#2 - 5:15:00	29.82	29.84	29.87	29.89	29.91
#2 - 5:20:00	29.93	29.96	29.98	30.00	30.02
#2 - 5:25:00	30.04	30.07	30.09	30.11	30.13
#2 - 5:30:00	30.16	30.18	30.20	30.22	30.24
#2 - 5:35:00	30.26	30.29	30.31	30.33	30.35
#2 - 5:40:00	30.37	30.39	30.41	30.43	30.45
#2 - 5:45:00	30.48	30.50	30.52	30.54	30.56
#2 - 5:50:00	30.58	30.60	30.62	30.64	30.66
#2 - 5:55:00	30.68	30.70	30.72	30.74	30.76
#2 - 6:00:00	30.78	30.80	30.82	30.84	30.86
#2 - 6:05:00	30.88	30.90	30.92	30.94	30.96
#2 - 6:10:00	30.98	31.00	31.02	31.04	31.06
#2 - 6:15:00	31.08	31.10	31.12	31.13	31.15
#2 - 6:20:00	31.17	31.19	31.21	31.23	31.25
#2 - 6:25:00	31.27	31.29	31.30	31.32	31.34

Projected TWA in Increments of 0:01:00 (h:m:s)

Dosimeter	+0 Incr.	+1 Incr.	+2 Incr.	+3 Incr.	+4 Incr.
#2 - 6:30:00	31.36	31.38	31.40	31.42	31.43
#2 - 6:35:00	31.45	31.47	31.49	31.51	31.52
#2 - 6:40:00	31.54	31.56	31.58	31.60	31.61
#2 - 6:45:00	31.63	31.65	31.67	31.69	31.70
#2 - 6:50:00	31.72	31.74	31.76	31.77	31.79
#2 - 6:55:00	31.81	31.83	31.84	31.86	31.88
#2 - 7:00:00	31.89	31.91	31.93	31.95	31.96
#2 - 7:05:00	31.98	32.00	32.01	32.03	32.05
#2 - 7:10:00	32.06	32.08	32.10	32.11	32.13
#2 - 7:15:00	32.15	32.16	32.18	32.20	32.21
#2 - 7:20:00	32.23	32.25	32.26	32.28	32.30
#2 - 7:25:00	32.31	32.33	32.34	32.36	32.38
#2 - 7:30:00	32.39	32.41	32.42	32.44	32.46
#2 - 7:35:00	32.47	32.49	32.50	32.52	32.54
#2 - 7:40:00	32.55	32.57	32.58	32.60	32.61
#2 - 7:45:00	32.63	32.64	32.66	32.68	32.69
#2 - 7:50:00	32.71	32.72	32.74	32.75	32.77
#2 - 7:55:00	32.78	32.80	32.81	32.83	32.84
#2 - 8:00:00	32.86				
#3 - 0:00:00		34.07	37.08	38.84	40.09
#3 - 0:05:00	41.06	41.85	42.52	43.10	43.61
#3 - 0:10:00	44.07	44.48	44.86	45.21	45.53
#3 - 0:15:00	45.83	46.11	46.38	46.62	46.86
#3 - 0:20:00	47.08	47.29	47.49	47.69	47.87
#3 - 0:25:00	48.05	48.22	48.38	48.54	48.69
#3 - 0:30:00	48.84	48.98	49.12	49.26	49.39
#3 - 0:35:00	49.51	49.63	49.75	49.87	49.98
#3 - 0:40:00	50.09	50.20	50.30	50.41	50.50
#3 - 0:45:00	50.60	50.70	50.79	50.88	50.97
#3 - 0:50:00	51.06	51.15	51.23	51.31	51.39
#3 - 0:55:00	51.47	51.55	51.63	51.70	51.78
#3 - 1:00:00	51.85	51.92	51.99	52.06	52.13
#3 - 1:05:00	52.20	52.27	52.33	52.40	52.46
#3 - 1:10:00	52.52	52.58	52.64	52.70	52.76
#3 - 1:15:00	52.82	52.88	52.94	52.99	53.05
#3 - 1:20:00	53.10	53.16	53.21	53.26	53.31
#3 - 1:25:00	53.36	53.42	53.47	53.51	53.56
#3 - 1:30:00	53.61	53.66	53.71	53.75	53.80
#3 - 1:35:00	53.85	53.89	53.94	53.98	54.03
#3 - 1:40:00	54.07	54.11	54.16	54.20	54.24
#3 - 1:45:00	54.28	54.32	54.36	54.40	54.44
#3 - 1:50:00	54.48	54.52	54.56	54.60	54.64
#3 - 1:55:00	54.68	54.71	54.75	54.79	54.83

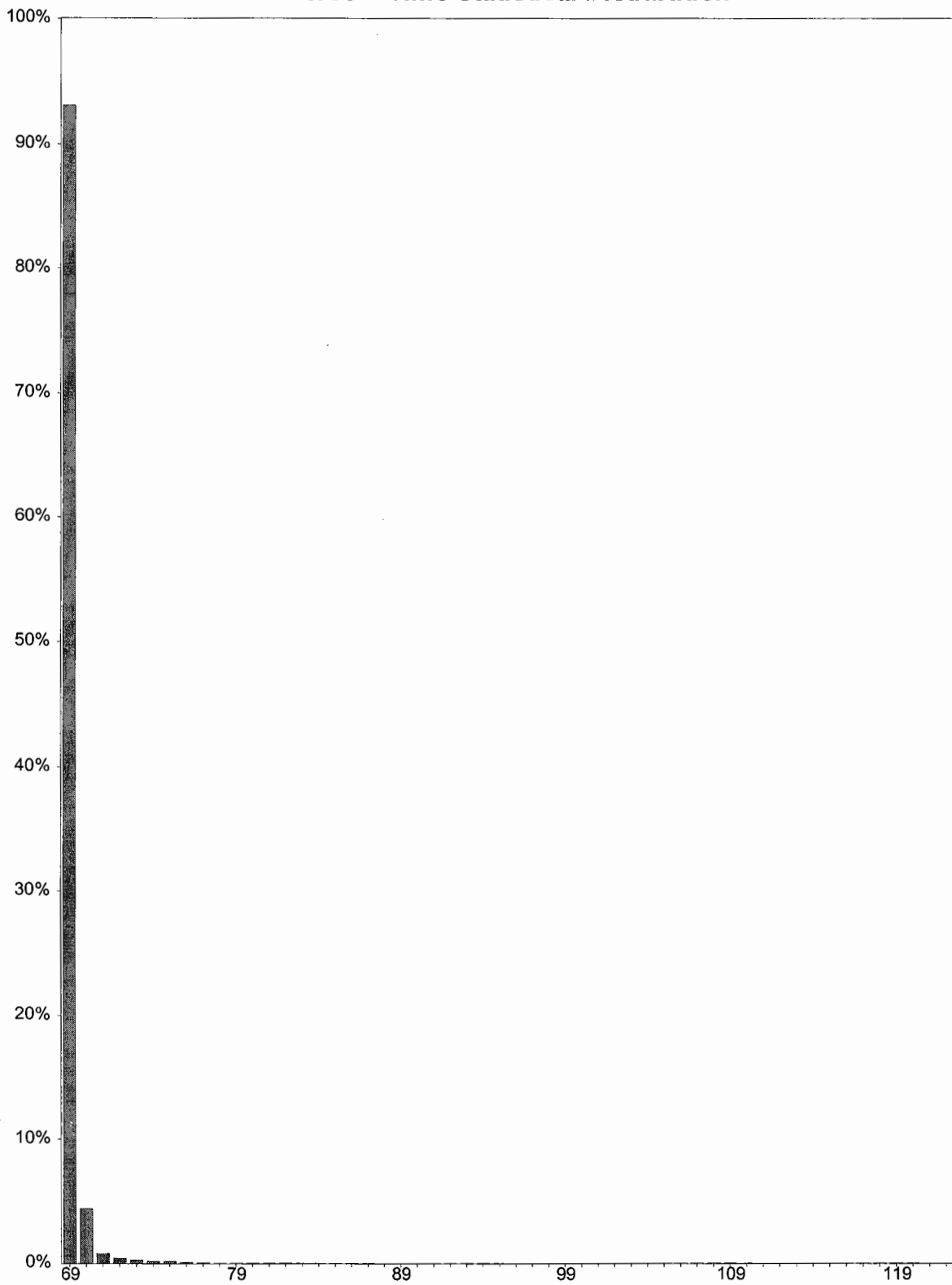
Projected TWA in Increments of 0:01:00 (h:m:s)

Dosimeter	+0 Incr.	+1 Incr.	+2 Incr.	+3 Incr.	+4 Incr.
#3 - 2:00:00	54.86	54.90	54.93	54.97	55.00
#3 - 2:05:00	55.04	55.07	55.11	55.14	55.18
#3 - 2:10:00	55.21	55.24	55.28	55.31	55.34
#3 - 2:15:00	55.37	55.41	55.44	55.47	55.50
#3 - 2:20:00	55.53	55.56	55.59	55.62	55.65
#3 - 2:25:00	55.68	55.71	55.74	55.77	55.80
#3 - 2:30:00	55.83	55.86	55.89	55.92	55.95
#3 - 2:35:00	55.97	56.00	56.03	56.06	56.08
#3 - 2:40:00	56.11	56.14	56.17	56.19	56.22
#3 - 2:45:00	56.24	56.27	56.30	56.32	56.35
#3 - 2:50:00	56.37	56.40	56.43	56.45	56.48
#3 - 2:55:00	56.50	56.52	56.55	56.57	56.60
#3 - 3:00:00	56.62	56.65	56.67	56.69	56.72
#3 - 3:05:00	56.74	56.76	56.79	56.81	56.83
#3 - 3:10:00	56.86	56.88	56.90	56.93	56.95
#3 - 3:15:00	56.97	56.99	57.01	57.04	57.06
#3 - 3:20:00	57.08	57.10	57.12	57.14	57.17
#3 - 3:25:00	57.19	57.21	57.23	57.25	57.27
#3 - 3:30:00	57.29	57.31	57.33	57.35	57.37
#3 - 3:35:00	57.39	57.41	57.43	57.45	57.47
#3 - 3:40:00	57.49	57.51	57.53	57.55	57.57
#3 - 3:45:00	57.59	57.61	57.63	57.65	57.67
#3 - 3:50:00	57.69	57.71	57.72	57.74	57.76
#3 - 3:55:00	57.78	57.80	57.82	57.84	57.85
#3 - 4:00:00	57.87	57.89	57.91	57.93	57.94
#3 - 4:05:00	57.96	57.98	58.00	58.01	58.03
#3 - 4:10:00	58.05	58.07	58.08	58.10	58.12
#3 - 4:15:00	58.14	58.15	58.17	58.19	58.20
#3 - 4:20:00	58.22	58.24	58.25	58.27	58.29
#3 - 4:25:00	58.30	58.32	58.33	58.35	58.37
#3 - 4:30:00	58.38	58.40	58.42	58.43	58.45
#3 - 4:35:00	58.46	58.48	58.49	58.51	58.53
#3 - 4:40:00	58.54	58.56	58.57	58.59	58.60
#3 - 4:45:00	58.62	58.63	58.65	58.66	58.68
#3 - 4:50:00	58.69	58.71	58.72	58.74	58.75
#3 - 4:55:00	58.77	58.78	58.80	58.81	58.83
#3 - 5:00:00	58.84	58.86	58.87	58.88	58.90
#3 - 5:05:00	58.91	58.93	58.94	58.96	58.97
#3 - 5:10:00	58.98	59.00	59.01	59.03	59.04
#3 - 5:15:00	59.05	59.07	59.08	59.09	59.11
#3 - 5:20:00	59.12	59.13	59.15	59.16	59.18
#3 - 5:25:00	59.19	59.20	59.22	59.23	59.24
#3 - 5:30:00	59.25	59.27	59.28	59.29	59.31
#3 - 5:35:00	59.32	59.33	59.35	59.36	59.37

Projected TWA in Increments of 0:01:00 (h:m:s)

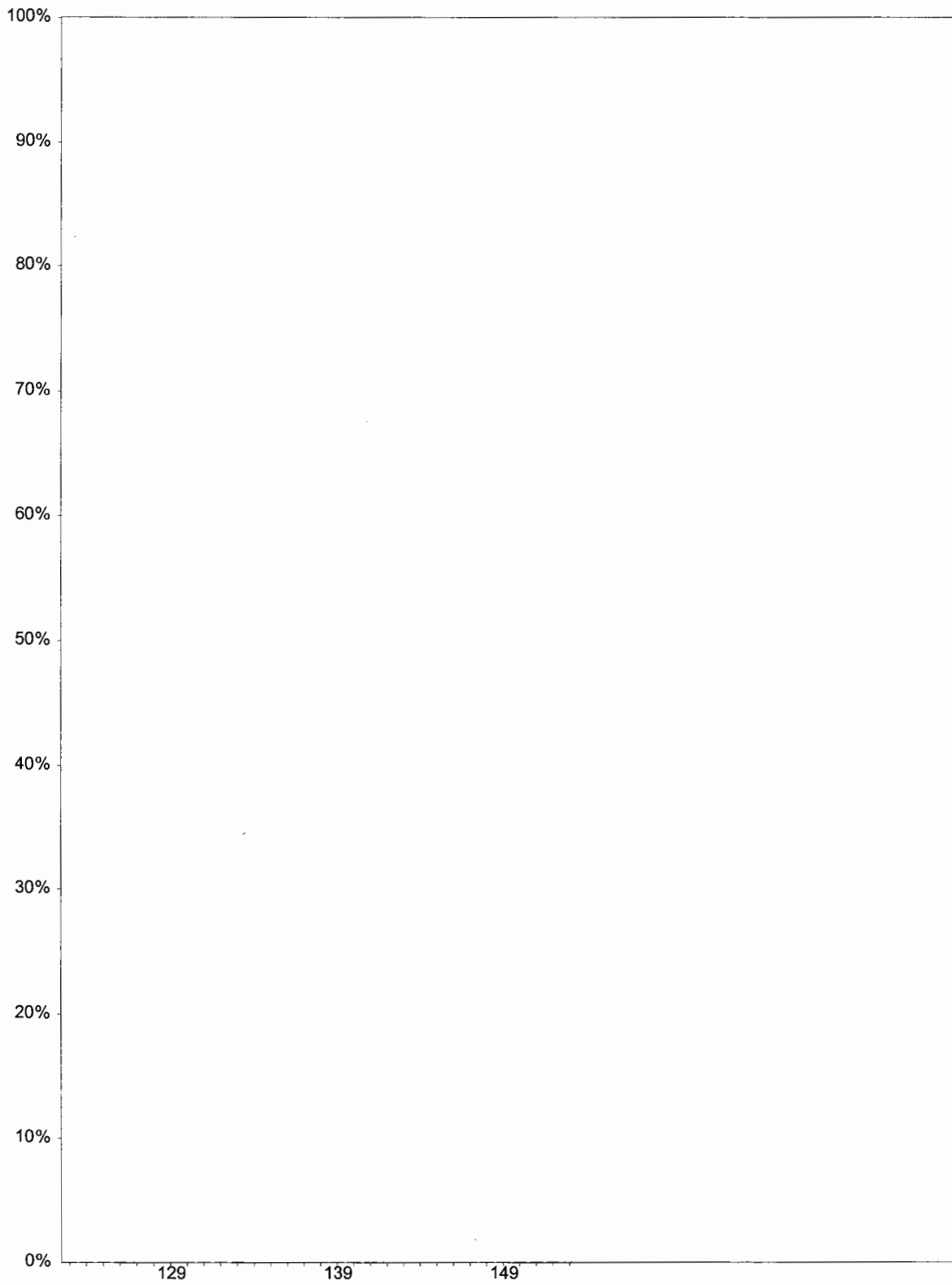
Dosimeter	+0 Incr.	+1 Incr.	+2 Incr.	+3 Incr.	+4 Incr.
#3 - 5:40:00	59.38	59.40	59.41	59.42	59.44
#3 - 5:45:00	59.45	59.46	59.47	59.49	59.50
#3 - 5:50:00	59.51	59.52	59.53	59.55	59.56
#3 - 5:55:00	59.57	59.58	59.60	59.61	59.62
#3 - 6:00:00	59.63	59.64	59.66	59.67	59.68
#3 - 6:05:00	59.69	59.70	59.72	59.73	59.74
#3 - 6:10:00	59.75	59.76	59.77	59.79	59.80
#3 - 6:15:00	59.81	59.82	59.83	59.84	59.86
#3 - 6:20:00	59.87	59.88	59.89	59.90	59.91
#3 - 6:25:00	59.92	59.94	59.95	59.96	59.97
#3 - 6:30:00	59.98	59.99	60.00	60.01	60.02
#3 - 6:35:00	60.04	60.05	60.06	60.07	60.08
#3 - 6:40:00	60.09	60.10	60.11	60.12	60.13
#3 - 6:45:00	60.14	60.15	60.17	60.18	60.19
#3 - 6:50:00	60.20	60.21	60.22	60.23	60.24
#3 - 6:55:00	60.25	60.26	60.27	60.28	60.29
#3 - 7:00:00	60.30	60.31	60.32	60.33	60.34
#3 - 7:05:00	60.35	60.36	60.37	60.38	60.39
#3 - 7:10:00	60.40	60.41	60.42	60.43	60.44
#3 - 7:15:00	60.45	60.46	60.47	60.48	60.49
#3 - 7:20:00	60.50	60.51	60.52	60.53	60.54
#3 - 7:25:00	60.55	60.56	60.57	60.58	60.59
#3 - 7:30:00	60.60	60.61	60.62	60.63	60.64
#3 - 7:35:00	60.65	60.66	60.67	60.68	60.69
#3 - 7:40:00	60.70	60.71	60.72	60.73	60.73
#3 - 7:45:00	60.74	60.75	60.76	60.77	60.78
#3 - 7:50:00	60.79	60.80	60.81	60.82	60.83
#3 - 7:55:00	60.84	60.85	60.85	60.86	60.87
#3 - 8:00:00	60.88				

Percent Time Statistical Distribution



Slow

Percent Time Statistical Distribution



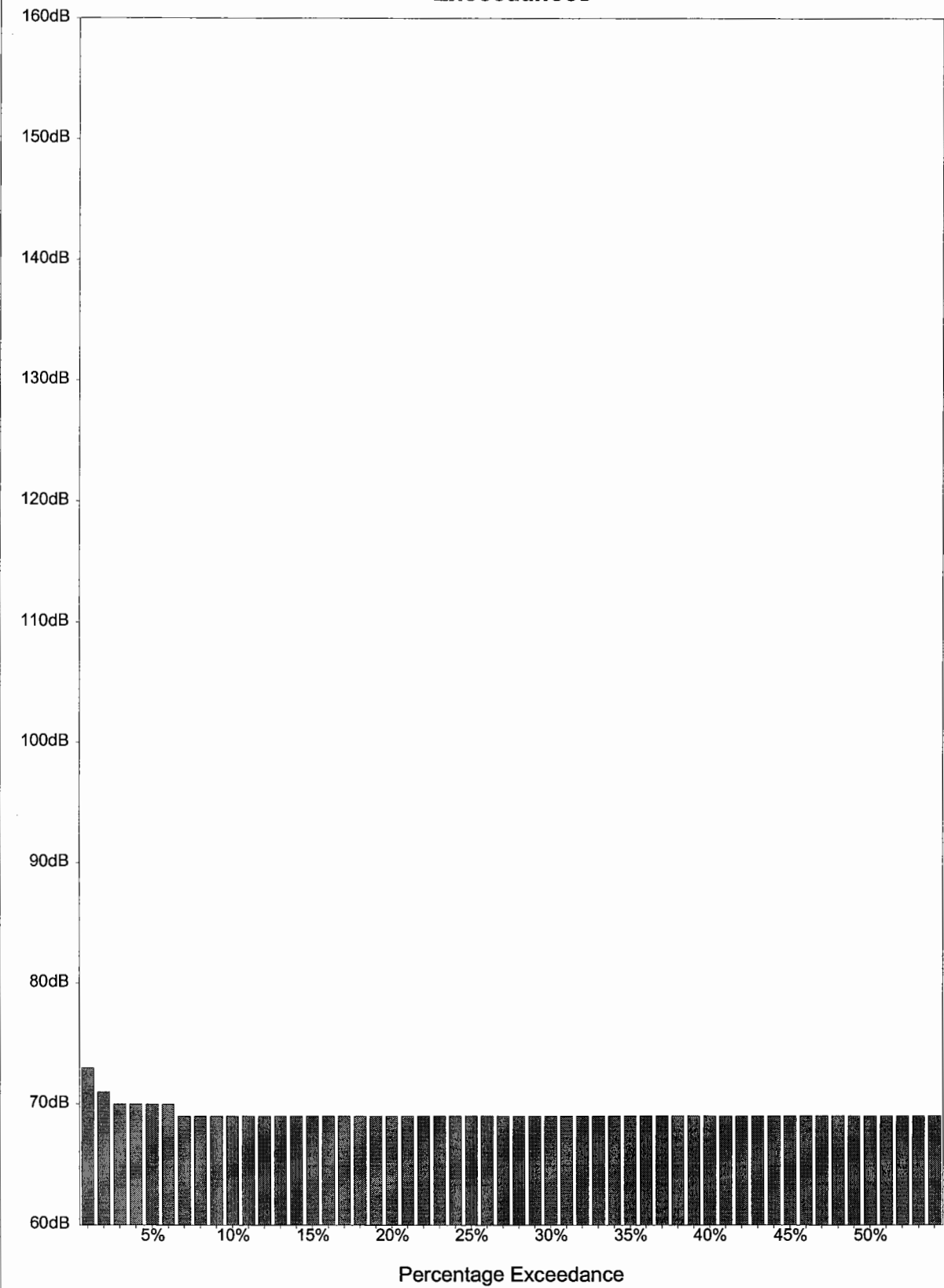
Tick marks in dB

■ Slow

Percent Time Statistical Distribution

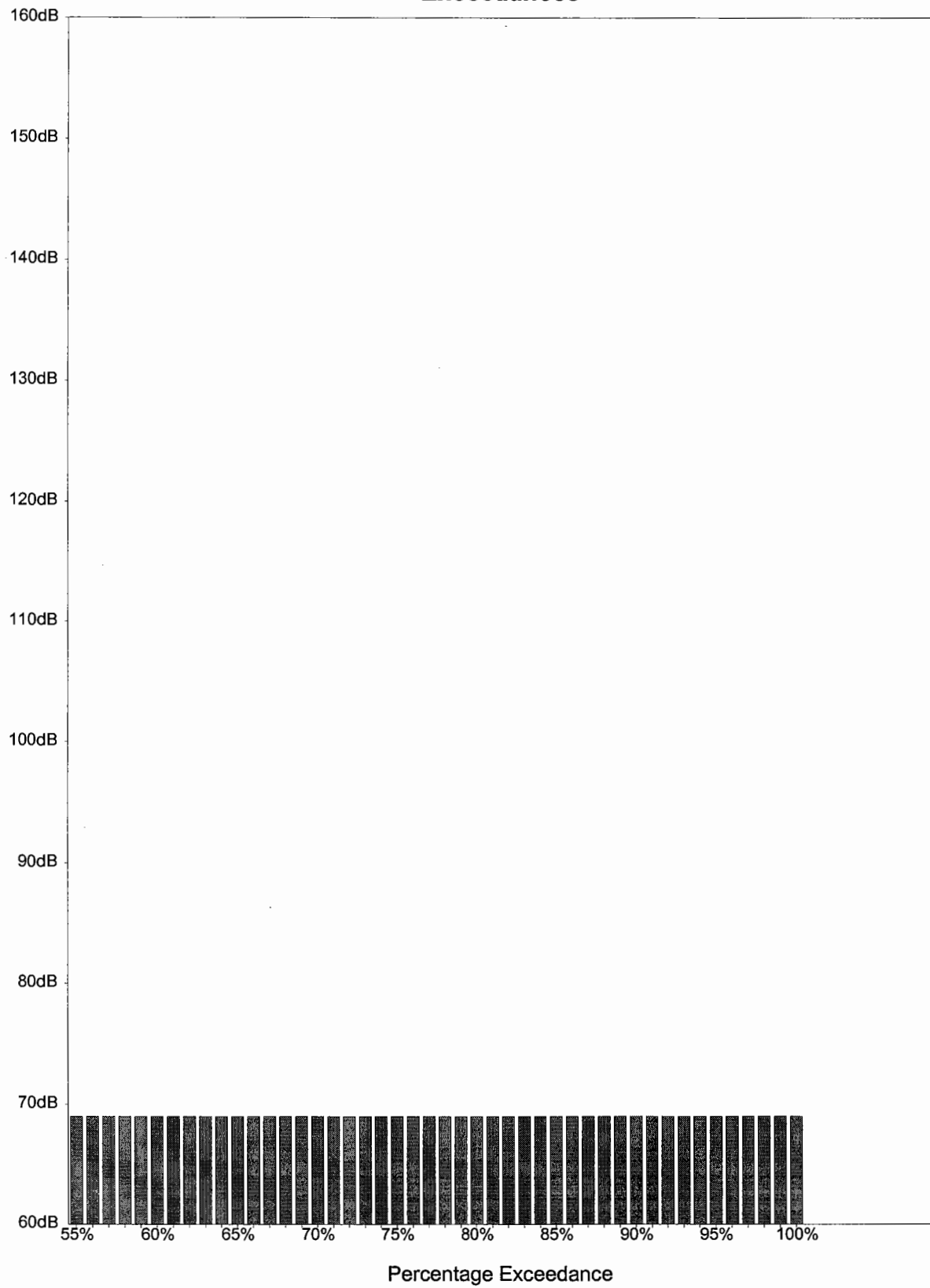
Dosimeter	0dB	1dB	2dB	3dB	4dB	5dB	6dB	7dB	8dB	9dB
Slow - 60dB										93.10
Slow - 70dB	4.43	0.81	0.42	0.28	0.21	0.18	0.12	0.09	0.06	0.05
Slow - 80dB	0.03	0.03	0.04	0.04	0.03	0.02	0.02	0.01	0.01	0.00
Slow - 90dB	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Slow - 100dB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Slow - 110dB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Slow - 120dB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Slow - 130dB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Slow - 140dB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Slow - 150dB	0.00	0.00	0.00	0.00						

Exceedances



Slow

Exceedances



Slow

Exceedances

Dosimeter	0%	1%	2%	3%	4%	5%	6%	7%	8%	9%
Slow - 0%		73	71	70	70	70	70	69	69	69
Slow - 10%	69	69	69	69	69	69	69	69	69	69
Slow - 20%	69	69	69	69	69	69	69	69	69	69
Slow - 30%	69	69	69	69	69	69	69	69	69	69
Slow - 40%	69	69	69	69	69	69	69	69	69	69
Slow - 50%	69	69	69	69	69	69	69	69	69	69
Slow - 60%	69	69	69	69	69	69	69	69	69	69
Slow - 70%	69	69	69	69	69	69	69	69	69	69
Slow - 80%	69	69	69	69	69	69	69	69	69	69
Slow - 90%	69	69	69	69	69	69	69	69	69	69
Slow - 100%	69									

Logging Parameters

Model Number: Q-300
Firmware: 2.60
Serial Number: QC3010143
Meter Range: 70 - 140dB
Projected Period: 8:00

Parameters for Dosimeters 1 through 3

Weighting:	A	A	A
Threshold:	80dB	90dB	80dB
Exchange Rate:	5dB	5dB	3dB
Criterion:	90dB	90dB	85dB
Time Constant:	Slow	Slow	Slow
Upper Limit:	115dB	115dB	115dB
LDN:	Off		

Noise File Values

Run Time:	4:51:41		
Pause Time:	6:11:22		
Peak Level:	128.2dB	128.2dB	128.2dB
	7/1/04 1:29:58 PM	7/1/04 1:29:58 PM	7/1/04 1:29:58 PM
Max Level:	98.7dB (Slow)	98.7dB (Slow)	98.7dB (Slow)
	7/1/04 1:29:58 PM	7/1/04 1:29:58 PM	7/1/04 1:29:58 PM
Min Level:	69.9dB (Slow)	69.9dB (Slow)	69.9dB (Slow)
	7/1/04 10:29:56 AM	7/1/04 10:29:56 AM	7/1/04 10:29:56 AM
LAVG:	42.6dB	32.9dB	60.9dB
TWA:	39.0dB	29.3dB	58.7dB
TWA [8:00]:	42.6dB	32.9dB	60.9dB
Dose:	0.08%	0.02%	0.24%
Dose [8]:	0.13%	0.03%	0.38%
Dose [8:00]:	0.13%	0.03%	0.38%
SEL (E/R):	113.0dB	103.3dB	103.3dB
UL Time:	0:00:00	0:00:00	0:00:00
Overload:	0.0%		
Pa2Sec:			8.5

Event #1 Logging Parameters

Model Number: Q-300
Firmware: 2.60
Serial Number: QC3010143
Start Time: 7/1/04 10:29:56 AM
Stop Time: 7/1/04 10:44:57 AM
Logging Interval: 0:01:00
Meter Range: 70 - 140dB
Projected Period: 8:00

Parameters for Dosimeters 1 through 3

Weighting:	A	A	A
Threshold:	80dB	90dB	80dB
Exchange Rate:	5dB	5dB	3dB
Criterion:	90dB	90dB	85dB
Time Constant:	Slow	Slow	Slow
Upper Limit:	115dB	115dB	115dB
LDN:	Off		

Event #1 with 1 Sample per Division

Time	LAVG #1	LAVG #2	LEQ #3	Slow MAX	Fast MAX	LPEAK	Comment (double click to edit)
10:29:56 AM	0.0	0.0	0.0	69.9	69.9	98.3	
10:30:56 AM	0.0	0.0	0.0	70.2	72.0	97.7	
10:31:56 AM	0.0	0.0	0.0	74.0	79.0	100.7	
10:32:56 AM	0.0	0.0	0.0	69.9	69.9	94.3	
10:33:56 AM	0.0	0.0	0.0	73.2	78.7	99.7	
10:34:56 AM	0.0	0.0	0.0	70.4	73.3	97.6	
10:35:56 AM	0.0	0.0	0.0	73.4	79.2	98.4	
10:36:56 AM	0.0	0.0	0.0	76.1	82.9	99.9	
10:37:56 AM	0.0	0.0	0.0	77.2	84.9	102.1	
10:38:56 AM	30.5	0.0	50.2 ✓	80.0 ✓	89.0	114.8 ✓	
10:39:56 AM	0.0	0.0	0.0	69.9	69.9	94.1	
10:40:56 AM	0.0	0.0	0.0	69.9	69.9	94.0	
10:41:56 AM	0.0	0.0	0.0	73.1	80.1	106.7	
10:42:56 AM	0.0	0.0	0.0	71.0	76.3	100.5	
10:43:56 AM	0.0	0.0	0.0	69.9	69.9	94.2	

Event #1 Values

Run Time:	0:15:00		
Peak Level:	114.8dB	114.8dB	114.8dB
	7/1/04 10:39:07 AM	7/1/04 10:39:07 AM	7/1/04 10:39:07 AM
Max Level:	80.0dB (Slow)	80.0dB (Slow)	80.0dB (Slow)
	7/1/04 10:39:07 AM	7/1/04 10:39:07 AM	7/1/04 10:39:07 AM
Min Level:	69.9dB (Slow)	69.9dB (Slow)	69.9dB (Slow)
	7/1/04 10:29:56 AM	7/1/04 10:29:56 AM	7/1/04 10:29:56 AM
LAVG:	10.8dB	0.0dB	38.3dB
TWA:	0.0dB	0.0dB	23.3dB
TWA [8:00]:	10.8dB	0.0dB	38.3dB
Dose:	0.00%	0.00%	0.00%
Dose [8]:	0.00%	0.00%	0.00%
Dose [8:00]:	0.00%	0.00%	0.00%
SEL (E/R):	59.9dB	0.0dB	67.9dB
Overload:	0.0%		
Pa2Sec:			0.0

Event #1 Comments:

Residential Area - Dalecarlia Reservoir

10:31 Airplane

10:32 Airplane

10:36 Airplane

10:37 Airplane

10:39 Airplane

10:41 Airplane

10:43 Truck

10:44 Insects

Event #2 Logging Parameters

Model Number: Q-300
Firmware: 2.60
Serial Number: QC3010143
Start Time: 7/1/04 11:00:01 AM
Stop Time: 7/1/04 11:15:15 AM
Logging Interval: 0:01:00
Meter Range: 70 - 140dB
Projected Period: 8:00

Parameters for Dosimeters 1 through 3

Weighting:	A	A	A
Threshold:	80dB	90dB	80dB
Exchange Rate:	5dB	5dB	3dB
Criterion:	90dB	90dB	85dB
Time Constant:	Slow	Slow	Slow
Upper Limit:	115dB	115dB	115dB
LDN:	Off		

Event #2 with 1 Sample per Division

Time	LAVG #1	LAVG #2	LEQ #3	Slow MAX	Fast MAX	LPEAK	Comment (double click to edit)
11:00:01 AM	37.1	0.0	54.2	80.1	88.8	114.9	
11:01:01 AM	0.0	0.0	0.0	69.9	69.9	93.8	
11:02:01 AM	0.0	0.0	0.0	72.6	76.9	101.7	
11:03:01 AM	0.0	0.0	0.0	70.0	71.5	98.5	
11:04:01 AM	0.0	0.0	0.0	76.9	84.6	108.1	
11:05:01 AM	0.0	0.0	0.0	76.2	81.5	100.7	
11:06:01 AM	0.0	0.0	0.0	75.1	83.3	108.6	
11:07:01 AM	0.0	0.0	0.0	69.9	69.9	97.2	
11:08:01 AM	56.2	0.0	66.9	84.4 ✓	91.2	117.7 ✓	
11:09:01 AM	39.9	0.0	56.1	80.8	69.9	94.7	
11:10:01 AM	0.0	0.0	0.0	77.8	79.7	100.6	
11:11:01 AM	0.0	0.0	0.0	70.0	70.1	97.1	
11:12:01 AM	0.0	0.0	0.0	69.9	69.9	101.1	
11:13:01 AM	0.0	0.0	0.0	72.1	73.3	96.1	
11:14:01 AM	0.0	0.0	0.0	69.9	69.9	94.3	

Event #2 Values

Run Time:	0:15:13		
Peak Level:	117.7dB	117.7dB	117.7dB
	7/1/04 11:09:00 AM	7/1/04 11:09:00 AM	7/1/04 11:09:00 AM
Max Level:	84.4dB (Slow)	84.4dB (Slow)	84.4dB (Slow)
	7/1/04 11:09:00 AM	7/1/04 11:09:00 AM	7/1/04 11:09:00 AM
Min Level:	69.9dB (Slow)	69.9dB (Slow)	69.9dB (Slow)
	7/1/04 11:00:01 AM	7/1/04 11:00:01 AM	7/1/04 11:00:01 AM
LAVG:	37.7dB	0.0dB	55.6dB
TWA:	12.8dB	0.0dB	40.7dB
TWA [8:00]:	37.7dB	0.0dB	55.6dB
Dose:	0.00%	0.00%	0.00%
Dose [8]:	0.00%	0.00%	0.00%
Dose [8:00]:	0.00%	0.00%	0.00%
SEL (E/R):	86.9dB	0.0dB	85.2dB
Overload:	0.0%		
Pa2Sec:			0.1

Event #2 Comments:

Recreational Trail - Dalecarlia Reservoir

11:01 Airplane

11:05 Airplane

11:06 Airplane

11:08 Airplane

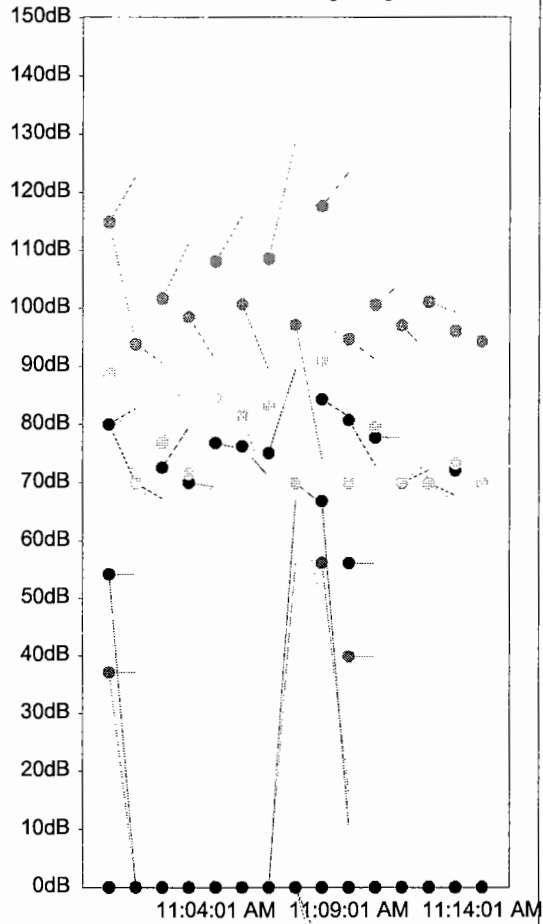
11:10 Airplane

11:11 Airplane

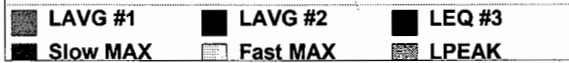
11:13 Airplane

11:14 Airplane

Event #2 with 1 Sample per Division



Logged between 7/1/04 11:00:01 AM and 7/1/04 11:15:15 AM at 0:01:00 intervals



Event #3 Logging Parameters

Model Number: Q-300
Firmware: 2.60
Serial Number: QC3010143
Start Time: 7/1/04 11:40:12 AM
Stop Time: 7/1/04 11:40:19 AM
Logging Interval: 0:01:00
Meter Range: 70 - 140dB
Projected Period: 8:00

Parameters for Dosimeters 1 through 3

Weighting:	A	A	A
Threshold:	80dB	90dB	80dB
Exchange Rate:	5dB	5dB	3dB
Criterion:	90dB	90dB	85dB
Time Constant:	Slow	Slow	Slow
Upper Limit:	115dB	115dB	115dB
LDN:	Off		

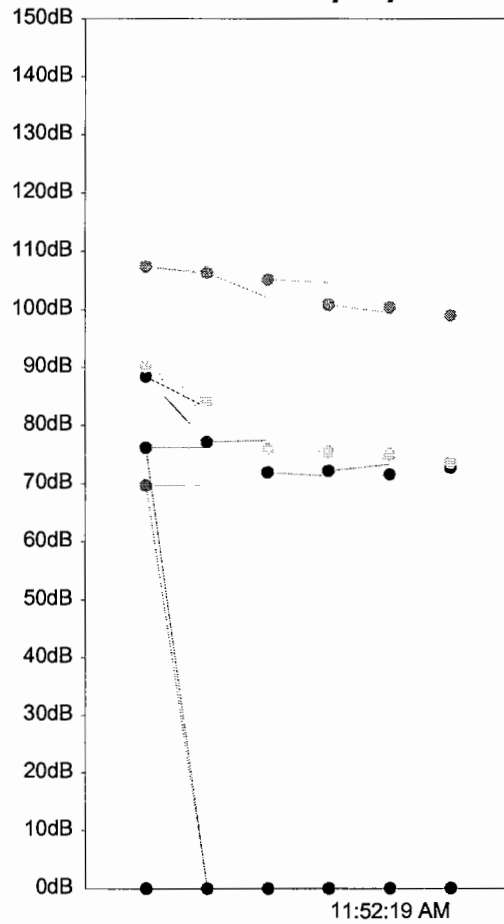
Event #3 Values

Run Time:	0:00:06		
Peak Level:	105.8dB	105.8dB	105.8dB
	7/1/04 11:40:16 AM	7/1/04 11:40:16 AM	7/1/04 11:40:16 AM
Max Level:	78.9dB (Slow)	78.9dB (Slow)	78.9dB (Slow)
	7/1/04 11:40:15 AM	7/1/04 11:40:15 AM	7/1/04 11:40:15 AM
Min Level:	70.0dB (Slow)	70.0dB (Slow)	70.0dB (Slow)
	7/1/04 11:40:12 AM	7/1/04 11:40:12 AM	7/1/04 11:40:12 AM
LAVG:	0.0dB	0.0dB	0.0dB
TWA:	0.0dB	0.0dB	0.0dB
TWA [8:00]:	0.0dB	0.0dB	0.0dB
Dose:	0.00%	0.00%	0.00%
Dose [8]:	0.00%	0.00%	0.00%
Dose [8:00]:	0.00%	0.00%	0.00%
SEL (E/R):	0.0dB	0.0dB	0.0dB
Overload:	0.0%		
Pa2Sec:			0.0

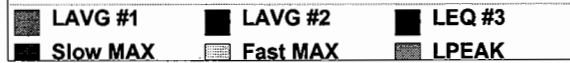
Event #3 Comments:
Construction Zone - Little Falls Road

11:40 Truck (not loaded)

Event #4 with 1 Sample per Division



Logged between 7/1/04 11:48:19 AM and 7/1/04 11:54:52 AM at 0:01:00 intervals



Event #4 with 1 Sample per Division

Time	LAVG #1	LAVG #2	LEQ #3	Slow MAX	Fast MAX	LPEAK	Comment (double click to edit)
11:48:19 AM	69.7	0.0	76.2	88.4	90.2	107.4	
11:49:19 AM	0.0	0.0	0.0	77.2	84.2	106.4	
11:50:19 AM	0.0	0.0	0.0	71.9	76.0	105.2	
11:51:19 AM	0.0	0.0	0.0	72.2	75.5	100.9	
11:52:19 AM	0.0	0.0	0.0	71.6	75.0	100.4	
11:53:19 AM	0.0	0.0	0.0	72.7	73.6	99.0	

Event #4 Logging Parameters

Model Number: Q-300
Firmware: 2.60
Serial Number: QC3010143
Start Time: 7/1/04 11:48:19 AM
Stop Time: 7/1/04 11:54:52 AM
Logging Interval: 0:01:00
Meter Range: 70 - 140dB
Projected Period: 8:00

Parameters for Dosimeters 1 through 3

Weighting:	A	A	A
Threshold:	80dB	90dB	80dB
Exchange Rate:	5dB	5dB	3dB
Criterion:	90dB	90dB	85dB
Time Constant:	Slow	Slow	Slow
Upper Limit:	115dB	115dB	115dB
LDN:	Off		

Event #4 Values

Run Time:	0:06:32		
Peak Level:	107.4dB	107.4dB	107.4dB
	7/1/04 11:48:23 AM	7/1/04 11:48:23 AM	7/1/04 11:48:23 AM
Max Level:	88.4dB (Slow)	88.4dB (Slow)	88.4dB (Slow)
	7/1/04 11:48:23 AM	7/1/04 11:48:23 AM	7/1/04 11:48:23 AM
Min Level:	69.9dB (Slow)	69.9dB (Slow)	69.9dB (Slow)
	7/1/04 11:48:38 AM	7/1/04 11:48:38 AM	7/1/04 11:48:38 AM
LAVG:	56.3dB	0.0dB	68.1dB
TWA:	25.3dB	0.0dB	49.4dB
TWA [8:00]:	56.3dB	0.0dB	68.1dB
Dose:	0.01%	0.00%	0.03%
Dose [8]:	0.73%	0.00%	1.47%
Dose [8:00]:	0.73%	0.00%	1.47%
SEL (E/R):	99.4dB	0.0dB	94.0dB
Overload:	0.0%		
Pa2Sec:			1.0

Event #4 Comments:

Construction Zone - Little Falls Road

11:48 Excavator

Event #5 Logging Parameters

Model Number: Q-300
Firmware: 2.60
Serial Number: QC3010143
Start Time: 7/1/04 11:54:53 AM
Stop Time: 7/1/04 11:54:58 AM
Logging Interval: 0:01:00
Meter Range: 70 - 140dB
Projected Period: 8:00

Parameters for Dosimeters 1 through 3

Weighting:	A	A	A
Threshold:	80dB	90dB	80dB
Exchange Rate:	5dB	5dB	3dB
Criterion:	90dB	90dB	85dB
Time Constant:	Slow	Slow	Slow
Upper Limit:	115dB	115dB	115dB
LDN:	Off		

Event #5 Values

Run Time:	0:00:05		
Peak Level:	104.8dB	104.8dB	104.8dB
	7/1/04 11:54:56 AM	7/1/04 11:54:56 AM	7/1/04 11:54:56 AM
Max Level:	83.7dB (Slow)	83.7dB (Slow)	83.7dB (Slow)
	7/1/04 11:54:55 AM	7/1/04 11:54:55 AM	7/1/04 11:54:55 AM
Min Level:	76.3dB (Slow)	76.3dB (Slow)	76.3dB (Slow)
	7/1/04 11:54:53 AM	7/1/04 11:54:53 AM	7/1/04 11:54:53 AM
LAVG:	79.5dB	0.0dB	80.8dB
TWA:	17.8dB	0.0dB	43.6dB
TWA [8:00]:	79.5dB	0.0dB	80.8dB
Dose:	0.00%	0.00%	0.01%
Dose [8]:	0.00%	0.00%	0.00%
Dose [8:00]:	0.00%	0.00%	0.00%
SEL (E/R):	91.9dB	0.0dB	88.2dB
Overload:	0.0%		
Pa2Sec:			0.3

Event #5 Comments:

Construction Zone - Little Falls Road

11:54 Truck

Event #6 Logging Parameters

Model Number: Q-300
Firmware: 2.60
Serial Number: QC3010143
Start Time: 7/1/04 11:58:27 AM
Stop Time: 7/1/04 11:58:38 AM
Logging Interval: 0:01:00
Meter Range: 70 - 140dB
Projected Period: 8:00

Parameters for Dosimeters 1 through 3

Weighting:	A	A	A
Threshold:	80dB	90dB	80dB
Exchange Rate:	5dB	5dB	3dB
Criterion:	90dB	90dB	85dB
Time Constant:	Slow	Slow	Slow
Upper Limit:	115dB	115dB	115dB
LDN:	Off		

Event #6 Values

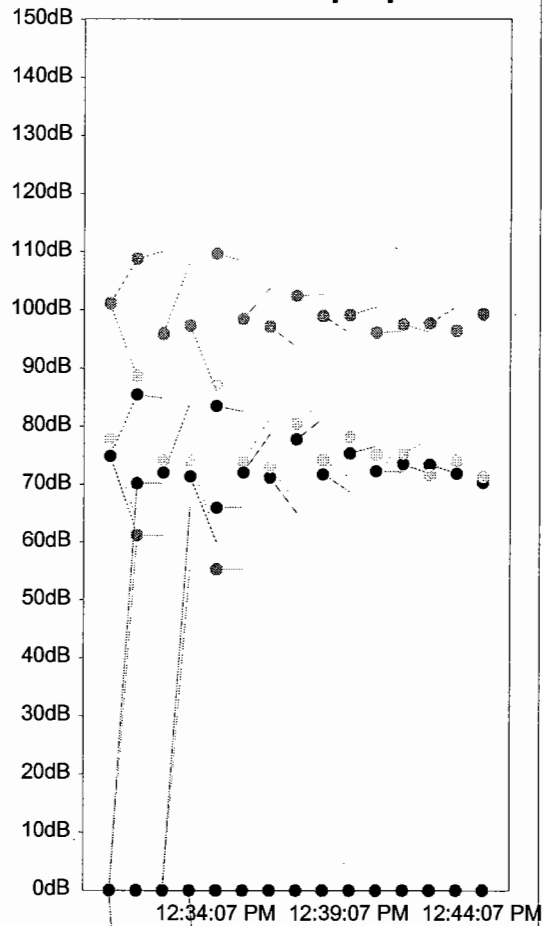
Run Time:	0:00:11		
Peak Level:	107.7dB	107.7dB	107.7dB
	7/1/04 11:58:33 AM	7/1/04 11:58:33 AM	7/1/04 11:58:33 AM
Max Level:	87.1dB (Slow)	87.1dB (Slow)	87.1dB (Slow)
	7/1/04 11:58:33 AM	7/1/04 11:58:33 AM	7/1/04 11:58:33 AM
Min Level:	73.3dB (Slow)	73.3dB (Slow)	73.3dB (Slow)
	7/1/04 11:58:27 AM	7/1/04 11:58:27 AM	7/1/04 11:58:27 AM
LAVG:	81.0dB	0.0dB	82.5dB
TWA:	24.2dB	0.0dB	48.4dB
TWA [8:00]:	81.0dB	0.0dB	82.5dB
Dose:	0.01%	0.00%	0.02%
Dose [8]:	26.18%	0.00%	52.36%
Dose [8:00]:	26.18%	0.00%	52.36%
SEL (E/R):	98.3dB	0.0dB	93.0dB
Overload:	0.0%		
Pa2Sec:			0.8

Event #6 Comments:

Construction Zone - Little Falls Road

11:58 Garbage Truck

Event #7 with 1 Sample per Division



Logged between 7/1/04 12:30:07 PM and 7/1/04 12:45:55 PM at 0:01:00 intervals

LAVG #1	LAVG #2	LEQ #3
Slow MAX	Fast MAX	LPEAK

Event #7 with 1 Sample per Division

Time	LAVG #1	LAVG #2	LEQ #3	Slow MAX	Fast MAX	LPEAK	Comment (double click to edit)
12:30:07 PM	0.0	0.0	0.0	74.9	78.0	101.1	
12:31:07 PM	61.2	0.0	70.2	85.5 ✓	88.7	108.8	
12:32:07 PM	0.0	0.0	0.0	72.0	74.1	96.0	
12:33:07 PM	0.0	0.0	0.0	71.4	74.2	97.3	
12:34:07 PM	55.3	0.0	66.0	83.5	87.3	109.7 ✓	
12:35:07 PM	0.0	0.0	0.0	72.1	74.1	98.5	
12:36:07 PM	0.0	0.0	0.0	71.2	73.2	97.2	
12:37:07 PM	0.0	0.0	0.0	77.8	80.5	102.5	
12:38:07 PM	0.0	0.0	0.0	71.8	74.2	99.0	
12:39:07 PM	0.0	0.0	0.0	75.4	78.2	99.2	
12:40:07 PM	0.0	0.0	0.0	72.3	75.2	96.2	
12:41:07 PM	0.0	0.0	0.0	73.5	75.4	97.6	
12:42:07 PM	0.0	0.0	0.0	73.4	71.7	97.8	
12:43:07 PM	0.0	0.0	0.0	71.8	74.1	96.5	
12:44:07 PM	0.0	0.0	0.0	70.3	71.3	99.3	

Event #7 Values

Run Time:	0:15:47		
Peak Level:	109.7dB	109.7dB	109.7dB
	7/1/04 12:34:15 PM	7/1/04 12:34:15 PM	7/1/04 12:34:15 PM
Max Level:	85.5dB (Slow)	85.5dB (Slow)	85.5dB (Slow)
	7/1/04 12:31:26 PM	7/1/04 12:31:26 PM	7/1/04 12:31:26 PM
Min Level:	69.9dB (Slow)	69.9dB (Slow)	69.9dB (Slow)
	7/1/04 12:30:13 PM	7/1/04 12:30:13 PM	7/1/04 12:30:13 PM
LAVG:	43.9dB	0.0dB	59.6dB
TWA:	19.3dB	0.0dB	44.8dB
TWA [8:00]:	43.9dB	0.0dB	59.6dB
Dose:	0.01%	0.00%	0.01%
Dose [8]:	0.00%	0.00%	0.00%
Dose [8:00]:	0.00%	0.00%	0.00%
SEL (E/R):	93.4dB	0.0dB	89.4dB
Overload:	0.0%		
Pa2Sec:			0.3

Event #7 Comments:

Sibley Hospital - Dalecarlia Reservoir

12:30 Bus going down the hill

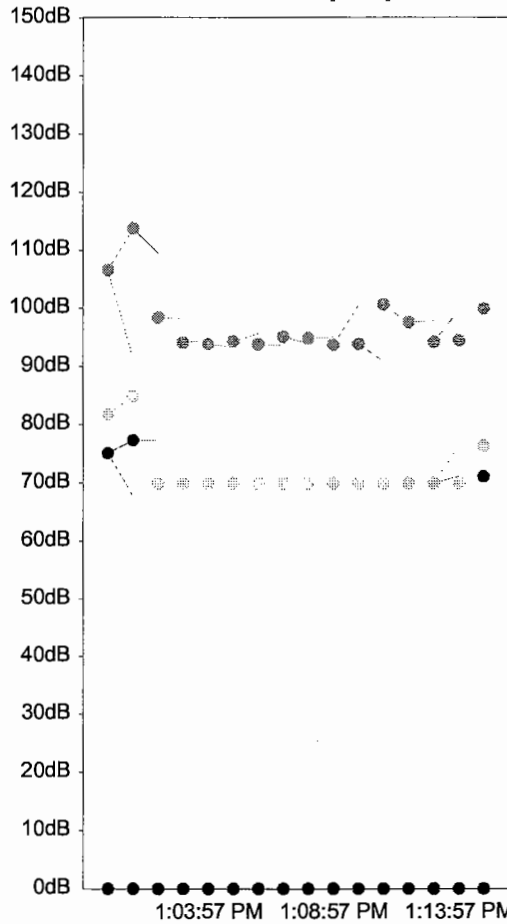
12:31 Bus going up

12:34 Passenger car / Truck going up

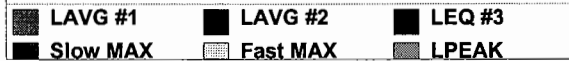
12:38 Small Truck & bike

12:39 Truck

Event #8 with 1 Sample per Division



Logged between 7/1/04 12:59:57 PM and 7/1/04 1:16:04 PM at 0:01:00 intervals



Event #8 with 1 Sample per Division

Time	LAVG #1	LAVG #2	LEQ #3	Slow MAX	Fast MAX	LPEAK	Comment (double click to edit)
12:59:57 PM	0.0	0.0	0.0	75.1	81.8	106.6	
1:00:57 PM	0.0	0.0	0.0	77.3	84.9	113.8	✓
1:01:57 PM	0.0	0.0	0.0	69.9	69.9	98.4	
1:02:57 PM	0.0	0.0	0.0	69.9	69.9	94.1	
1:03:57 PM	0.0	0.0	0.0	69.9	69.9	93.9	
1:04:57 PM	0.0	0.0	0.0	69.9	69.9	94.4	
1:05:57 PM	0.0	0.0	0.0	69.9	69.9	93.8	
1:06:57 PM	0.0	0.0	0.0	69.9	69.9	95.1	
1:07:57 PM	0.0	0.0	0.0	69.9	69.9	94.9	
1:08:57 PM	0.0	0.0	0.0	69.9	69.9	93.7	
1:09:57 PM	0.0	0.0	0.0	69.9	69.9	93.9	
1:10:57 PM	0.0	0.0	0.0	69.9	69.9	100.6	
1:11:57 PM	0.0	0.0	0.0	69.9	69.9	97.5	
1:12:57 PM	0.0	0.0	0.0	69.9	69.9	94.2	
1:13:57 PM	0.0	0.0	0.0	69.9	69.9	94.5	
1:14:57 PM	0.0	0.0	0.0	71.1	76.3	99.9	

Event #8 Logging Parameters

Model Number: Q-300
Firmware: 2.60
Serial Number: QC3010143
Start Time: 7/1/04 12:59:57 PM
Stop Time: 7/1/04 1:16:04 PM
Logging Interval: 0:01:00
Meter Range: 70 - 140dB
Projected Period: 8:00

Parameters for Dosimeters 1 through 3

Weighting:	A	A	A
Threshold:	80dB	90dB	80dB
Exchange Rate:	5dB	5dB	3dB
Criterion:	90dB	90dB	85dB
Time Constant:	Slow	Slow	Slow
Upper Limit:	115dB	115dB	115dB
LDN:	Off		

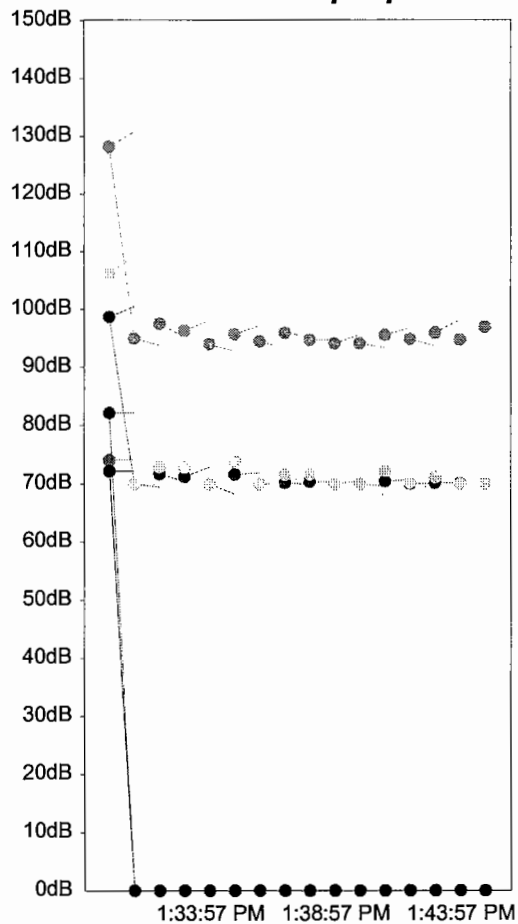
Event #8 Values

Run Time:	0:16:07		
Peak Level:	113.8dB	113.8dB	113.8dB
	7/1/04 1:01:31 PM	7/1/04 1:01:31 PM	7/1/04 1:01:31 PM
Max Level:	77.3dB (Slow)	77.3dB (Slow)	77.3dB (Slow)
	7/1/04 1:01:26 PM	7/1/04 1:01:26 PM	7/1/04 1:01:26 PM
Min Level:	69.9dB (Slow)	69.9dB (Slow)	69.9dB (Slow)
	7/1/04 12:59:57 PM	7/1/04 12:59:57 PM	7/1/04 12:59:57 PM
LAVG:	0.0dB	0.0dB	0.0dB
TWA:	0.0dB	0.0dB	0.0dB
TWA [8:00]:	0.0dB	0.0dB	0.0dB
Dose:	0.00%	0.00%	0.00%
Dose [8]:	0.00%	0.00%	0.00%
Dose [8:00]:	0.00%	0.00%	0.00%
SEL (E/R):	0.0dB	0.0dB	0.0dB
Overload:	0.0%		
Pa2Sec:			0.0

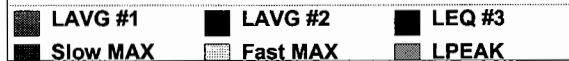
Event #8 Comments:
Residential Area - Dalecarlia Reservoir

01:00 Airplane
01:04 Airplane
01:12 Airplane
01:14 Airplane

Event #9 with 1 Sample per Division



Logged between 7/1/04 1:29:57 PM and 7/1/04 1:46:00 PM at 0:01:00 intervals



Event #9 with 1 Sample per Division

Time	LAVG #1	LAVG #2	LEQ #3	Slow MAX	Fast MAX	LPEAK	Comment (double click to edit)
1:29:57 PM	74.1	72.2	82.2	98.7	106.3	128.2 x	mike hit w/ hand
1:30:57 PM	0.0	0.0	0.0	69.9	69.9	95.0	
1:31:57 PM	0.0	0.0	0.0	71.7	72.9	97.5	
1:32:57 PM	0.0	0.0	0.0	71.2	72.8	96.3	
1:33:57 PM	0.0	0.0	0.0	69.9	69.9	94.0	
1:34:57 PM	0.0	0.0	0.0	71.6	73.9	95.7	
1:35:57 PM	0.0	0.0	0.0	69.9	69.9	94.5	
1:36:57 PM	0.0	0.0	0.0	70.2	71.5	95.9	
1:37:57 PM	0.0	0.0	0.0	70.3	71.6	94.7	
1:38:57 PM	0.0	0.0	0.0	69.9	69.9	94.1	
1:39:57 PM	0.0	0.0	0.0	69.9	69.9	94.1	
1:40:57 PM	0.0	0.0	0.0	70.4	72.2	95.6	
1:41:57 PM	0.0	0.0	0.0	70.0	70.1	94.8	
1:42:57 PM	0.0	0.0	0.0	70.1	71.0	95.9	
1:43:57 PM	0.0	0.0	0.0	70.0	69.9	94.7	
1:44:57 PM	0.0	0.0	0.0	69.9	69.9	96.9	

Event #9 Logging Parameters

Model Number: Q-300
Firmware: 2.60
Serial Number: QC3010143
Start Time: 7/1/04 1:29:57 PM
Stop Time: 7/1/04 1:46:00 PM
Logging Interval: 0:01:00
Meter Range: 70 - 140dB
Projected Period: 8:00

Parameters for Dosimeters 1 through 3

Weighting:	A	A	A
Threshold:	80dB	90dB	80dB
Exchange Rate:	5dB	5dB	3dB
Criterion:	90dB	90dB	85dB
Time Constant:	Slow	Slow	Slow
Upper Limit:	115dB	115dB	115dB
LDN:	Off		

Event #9 Values

Run Time:	0:16:02		
Peak Level:	128.2dB	128.2dB	128.2dB
	7/1/04 1:29:58 PM	7/1/04 1:29:58 PM	7/1/04 1:29:58 PM
Max Level:	98.7dB (Slow)	98.7dB (Slow)	98.7dB (Slow)
	7/1/04 1:29:58 PM	7/1/04 1:29:58 PM	7/1/04 1:29:58 PM
Min Level:	69.9dB (Slow)	69.9dB (Slow)	69.9dB (Slow)
	7/1/04 1:29:57 PM	7/1/04 1:29:57 PM	7/1/04 1:29:57 PM
LAVG:	54.1dB	52.2dB	70.1dB
TWA:	29.6dB	27.7dB	55.4dB
TWA [8:00]:	54.1dB	52.2dB	70.1dB
Dose:	0.02%	0.02%	0.11%
Dose [8]:	0.60%	0.30%	2.99%
Dose [8:00]:	0.60%	0.30%	2.99%
SEL (E/R):	103.7dB	101.8dB	100.0dB
Overload:	0.0%		
Pa2Sec:			4.0

Event #9 Comments:

Recreational Area - Dalecarlia Reservoir

01:30 The mike was accidentally hit by hand

01:32 Helicopter

01:33 Airplane

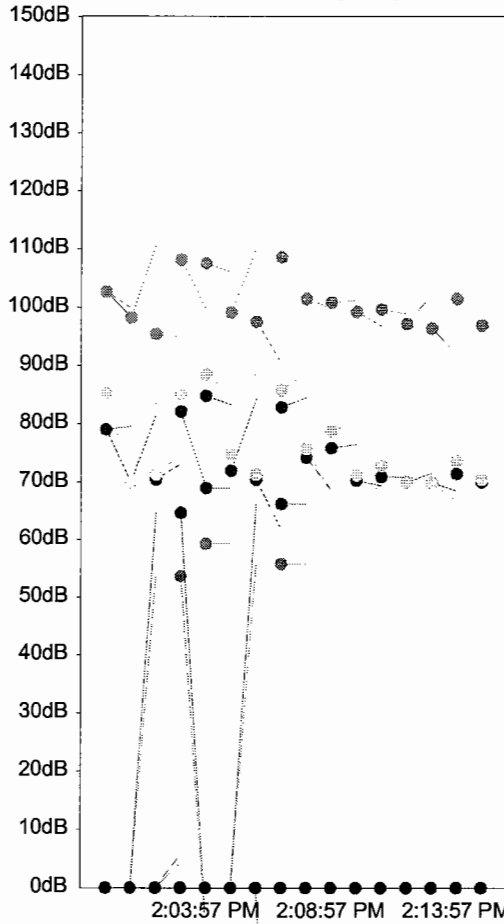
01:35 Airplane

01:38 Airplane

01:41 Airplane

01:42 Airplane

Event #10 with 1 Sample per Division



Logged between 7/1/04 1:59:57 PM and 7/1/04 2:16:08 PM at 0:01:00 intervals

LAVG #1	LAVG #2	LEQ #3
Slow MAX	Fast MAX	LPEAK

Event #10 with 1 Sample per Division

Time	LAVG #1	LAVG #2	LEQ #3	Slow MAX	Fast MAX	LPEAK	Comment (double click to edit)
1:59:57 PM	0.0	0.0	0.0	79.1	85.2	102.7	
2:00:57 PM	0.0	0.0	0.0	69.9	69.9	98.3	
2:01:57 PM	0.0	0.0	0.0	70.4	71.3	95.5	
2:02:57 PM	53.7	0.0	64.7	82.1	85.1	108.1	
2:03:57 PM	59.3	0.0	68.9	84.8	88.5	107.6	
2:04:57 PM	0.0	0.0	0.0	71.9	74.9	99.2	
2:05:57 PM	0.0	0.0	0.0	70.4	71.3	97.6	
2:06:57 PM	55.8	0.0	66.2	82.9	85.8	108.6	
2:07:57 PM	0.0	0.0	0.0	74.2	75.8	101.5	
2:08:57 PM	0.0	0.0	0.0	75.9	78.8	100.9	
2:09:57 PM	0.0	0.0	0.0	70.3	71.2	99.3	
2:10:57 PM	0.0	0.0	0.0	70.9	72.8	99.7	
2:11:57 PM	0.0	0.0	0.0	70.0	69.9	97.2	
2:12:57 PM	0.0	0.0	0.0	69.9	69.9	96.4	
2:13:57 PM	0.0	0.0	0.0	71.4	73.7	101.5	
2:14:57 PM	0.0	0.0	0.0	70.0	70.4	96.9	

Event #10 Logging Parameters

Model Number: Q-300
Firmware: 2.60
Serial Number: QC3010143
Start Time: 7/1/04 1:59:57 PM
Stop Time: 7/1/04 2:16:08 PM
Logging Interval: 0:01:00
Meter Range: 70 - 140dB
Projected Period: 8:00

Parameters for Dosimeters 1 through 3

Weighting:	A	A	A
Threshold:	80dB	90dB	80dB
Exchange Rate:	5dB	5dB	3dB
Criterion:	90dB	90dB	85dB
Time Constant:	Slow	Slow	Slow
Upper Limit:	115dB	115dB	115dB
LDN:	Off		

Event #10 Values

Run Time:	0:16:11		
Peak Level:	108.6dB	108.6dB	108.6dB
	7/1/04 2:07:19 PM	7/1/04 2:07:19 PM	7/1/04 2:07:19 PM
Max Level:	84.8dB (Slow)	84.8dB (Slow)	84.8dB (Slow)
	7/1/04 2:04:45 PM	7/1/04 2:04:45 PM	7/1/04 2:04:45 PM
Min Level:	69.9dB (Slow)	69.9dB (Slow)	69.9dB (Slow)
	7/1/04 2:00:00 PM	7/1/04 2:00:00 PM	7/1/04 2:00:00 PM
LAVG:	44.5dB	0.0dB	59.6dB
TWA:	20.1dB	0.0dB	44.9dB
TWA [8:00]:	44.5dB	0.0dB	59.6dB
Dose:	0.01%	0.00%	0.01%
Dose [8]:	0.00%	0.00%	0.00%
Dose [8:00]:	0.00%	0.00%	0.00%
SEL (E/R):	94.1dB	0.0dB	89.5dB
Overload:	0.0%		
Pa2Sec:			0.4

Event #10 Comments:

Sibley Hospital - Dalecarlia Reservoir

02:00 Airplane

02:03 School Bus

02:03 Truck

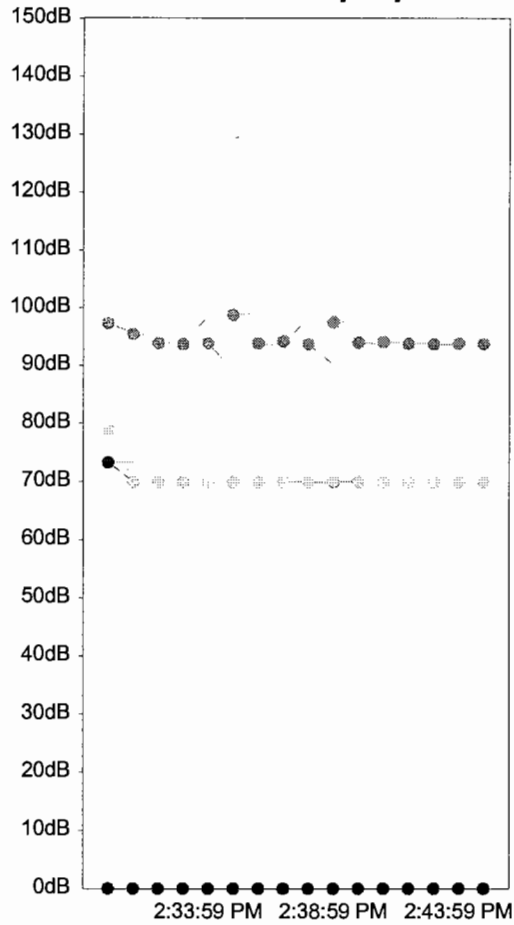
02:04 Bus

02:07 Bus

02:08 FedEx small Truck

02:09 Car

Event #11 with 1 Sample per Division



Logged between 7/1/04 2:29:59 PM and 7/1/04 2:46:02 PM at 0:01:00 intervals

■ LAVG #1	■ LAVG #2	■ LEQ #3
■ Slow MAX	■ Fast MAX	■ LPEAK

Event #11 with 1 Sample per Division

Time	LAVG #1	LAVG #2	LEQ #3	Slow MAX	Fast MAX	LPEAK	Comment (double click to edit)
2:29:59 PM	0.0	0.0	0.0	73.3 ✓	79.0	97.3	air flow
2:30:59 PM	0.0	0.0	0.0	69.9	69.9	95.4	
2:31:59 PM	0.0	0.0	0.0	69.9	69.9	93.9	
2:32:59 PM	0.0	0.0	0.0	69.9	69.9	93.7	
2:33:59 PM	0.0	0.0	0.0	69.9	69.9	93.9	
2:34:59 PM	0.0	0.0	0.0	69.9	69.9	98.8 ✓	air flow
2:35:59 PM	0.0	0.0	0.0	69.9	69.9	93.9	
2:36:59 PM	0.0	0.0	0.0	69.9	69.9	94.2	
2:37:59 PM	0.0	0.0	0.0	69.9	69.9	93.7	
2:38:59 PM	0.0	0.0	0.0	70.0	70.1	97.5	
2:39:59 PM	0.0	0.0	0.0	69.9	69.9	94.0	
2:40:59 PM	0.0	0.0	0.0	69.9	69.9	94.1	
2:41:59 PM	0.0	0.0	0.0	69.9	69.9	93.8	
2:42:59 PM	0.0	0.0	0.0	69.9	69.9	93.7	
2:43:59 PM	0.0	0.0	0.0	69.9	69.9	93.8	
2:44:59 PM	0.0	0.0	0.0	69.9	69.9	93.7	

Event #11 Logging Parameters

Model Number: Q-300
Firmware: 2.60
Serial Number: QC3010143
Start Time: 7/1/04 2:29:59 PM
Stop Time: 7/1/04 2:46:02 PM
Logging Interval: 0:01:00
Meter Range: 70 - 140dB
Projected Period: 8:00

Parameters for Dosimeters 1 through 3

Weighting:	A	A	A
Threshold:	80dB	90dB	80dB
Exchange Rate:	5dB	5dB	3dB
Criterion:	90dB	90dB	85dB
Time Constant:	Slow	Slow	Slow
Upper Limit:	115dB	115dB	115dB
LDN:	Off		

Event #11 Values

Run Time:	0:16:03		
Peak Level:	98.8dB	98.8dB	98.8dB
	7/1/04 2:35:39 PM	7/1/04 2:35:39 PM	7/1/04 2:35:39 PM
Max Level:	73.3dB (Slow)	73.3dB (Slow)	73.3dB (Slow)
	7/1/04 2:30:06 PM	7/1/04 2:30:06 PM	7/1/04 2:30:06 PM
Min Level:	69.9dB (Slow)	69.9dB (Slow)	69.9dB (Slow)
	7/1/04 2:29:59 PM	7/1/04 2:29:59 PM	7/1/04 2:29:59 PM
LAVG:	0.0dB	0.0dB	0.0dB
TWA:	0.0dB	0.0dB	0.0dB
TWA [8:00]:	0.0dB	0.0dB	0.0dB
Dose:	0.00%	0.00%	0.00%
Dose [8]:	0.00%	0.00%	0.00%
Dose [8:00]:	0.00%	0.00%	0.00%
SEL (E/R):	0.0dB	0.0dB	0.0dB
Overload:	0.0%		
Pa2Sec:			0.0

Event #11 Comments:

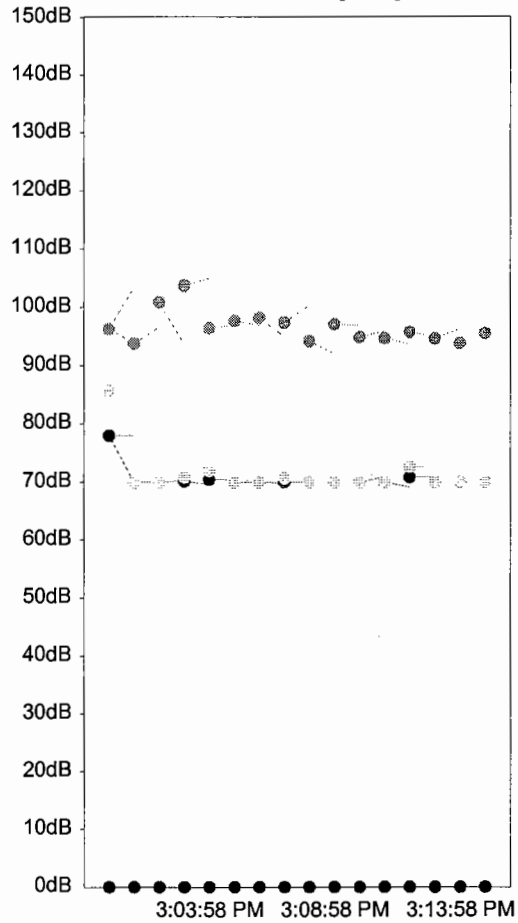
Residential Area - Dalecarlia Reservoir

02:31 Airplane

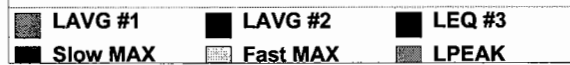
02:36 Airplane

02:41 Airplane

Event #12 with 1 Sample per Division



Logged between 7/1/04 2:59:58 PM and 7/1/04 3:16:07 PM at 0:01:00 intervals



Event #12 with 1 Sample per Division

Time	LAVG #1	LAVG #2	LEQ #3	Slow MAX	Fast MAX	LPEAK	Comment (double click to edit)
2:59:58 PM	0.0	0.0	0.0	78.0 ✓	85.7	96.3	
3:00:58 PM	0.0	0.0	0.0	69.9	69.9	93.8	
3:01:58 PM	0.0	0.0	0.0	69.9	69.9	100.9	
3:02:58 PM	0.0	0.0	0.0	70.1	70.8	103.7 ✓	Simple
3:03:58 PM	0.0	0.0	0.0	70.4	71.9	96.5	
3:04:58 PM	0.0	0.0	0.0	69.9	69.9	97.7	
3:05:58 PM	0.0	0.0	0.0	69.9	69.9	98.2	
3:06:58 PM	0.0	0.0	0.0	70.0	70.6	97.4	
3:07:58 PM	0.0	0.0	0.0	69.9	69.9	94.2	
3:08:58 PM	0.0	0.0	0.0	69.9	69.9	97.1	
3:09:58 PM	0.0	0.0	0.0	69.9	69.9	94.9	
3:10:58 PM	0.0	0.0	0.0	69.9	69.9	94.7	
3:11:58 PM	0.0	0.0	0.0	70.8	72.5	95.7	
3:12:58 PM	0.0	0.0	0.0	69.9	69.9	94.6	
3:13:58 PM	0.0	0.0	0.0	69.9	69.9	93.8	
3:14:58 PM	0.0	0.0	0.0	69.9	69.9	95.5	

Event #12 Logging Parameters

Model Number: Q-300
Firmware: 2.60
Serial Number: QC3010143
Start Time: 7/1/04 2:59:58 PM
Stop Time: 7/1/04 3:16:07 PM
Logging Interval: 0:01:00
Meter Range: 70 - 140dB
Projected Period: 8:00

Parameters for Dosimeters 1 through 3

Weighting:	A	A	A
Threshold:	80dB	90dB	80dB
Exchange Rate:	5dB	5dB	3dB
Criterion:	90dB	90dB	85dB
Time Constant:	Slow	Slow	Slow
Upper Limit:	115dB	115dB	115dB
LDN:	Off		

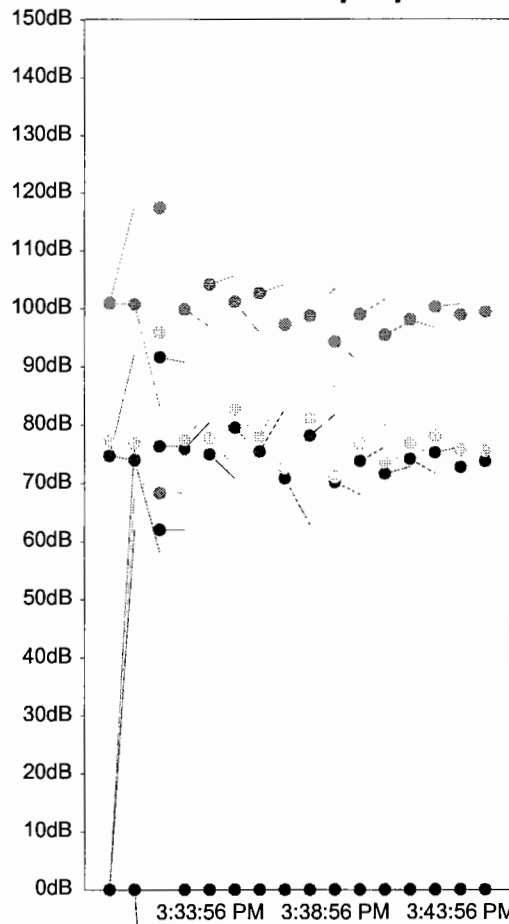
Event #12 Values

Run Time:	0:16:08		
Peak Level:	103.7dB	103.7dB	103.7dB
	7/1/04 3:03:42 PM	7/1/04 3:03:42 PM	7/1/04 3:03:42 PM
Max Level:	78.0dB (Slow)	78.0dB (Slow)	78.0dB (Slow)
	7/1/04 2:59:58 PM	7/1/04 2:59:58 PM	7/1/04 2:59:58 PM
Min Level:	69.9dB (Slow)	69.9dB (Slow)	69.9dB (Slow)
	7/1/04 3:00:04 PM	7/1/04 3:00:04 PM	7/1/04 3:00:04 PM
LAVG:	0.0dB	0.0dB	0.0dB
TWA:	0.0dB	0.0dB	0.0dB
TWA [8:00]:	0.0dB	0.0dB	0.0dB
Dose:	0.00%	0.00%	0.00%
Dose [8]:	0.00%	0.00%	0.00%
Dose [8:00]:	0.00%	0.00%	0.00%
SEL (E/R):	0.0dB	0.0dB	0.0dB
Overload:	0.0%		
Pa2Sec:			0.0

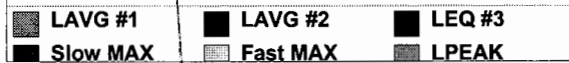
Event #12 Comments:
Recreational Trail - Dalecarlia Reservoir

03:04 Airplane
03:07 Airplane
03:12 Airplane

Event #13 with 1 Sample per Division



Logged between 7/1/04 3:29:56 PM and 7/1/04 3:45:59 PM at 0:01:00 intervals



Event #13 with 1 Sample per Division

Time	LAVG #1	LAVG #2	LEQ #3	Slow MAX	Fast MAX	LPEAK	Comment (double click to edit)
3:29:56 PM	0.0	0.0	0.0	74.7	77.3	101.0	
3:30:56 PM	0.0	0.0	0.0	74.0	76.8	100.8	
3:31:56 PM	68.3	62.0	76.4	91.7	96.0	117.4	Passenger Car & Truck P. motor bike Passenger Car & Truck
3:32:56 PM	0.0	0.0	0.0	75.9	77.5	99.9	
3:33:56 PM	0.0	0.0	0.0	75.0	77.7	104.2	Passenger Car & Truck
3:34:56 PM	0.0	0.0	0.0	79.6	82.8	101.2	.
3:35:56 PM	0.0	0.0	0.0	75.5	78.0	102.7	
3:36:56 PM	0.0	0.0	0.0	70.9	72.7	97.3	
3:37:56 PM	0.0	0.0	0.0	78.2	81.1	98.8	.
3:38:56 PM	0.0	0.0	0.0	70.2	71.1	94.3	
3:39:56 PM	0.0	0.0	0.0	73.8	76.8	99.0	
3:40:56 PM	0.0	0.0	0.0	71.7	73.6	95.5	
3:41:56 PM	0.0	0.0	0.0	74.1	76.8	98.1	
3:42:56 PM	0.0	0.0	0.0	75.2	78.1	100.3	
3:43:56 PM	0.0	0.0	0.0	72.8	75.7	98.9	
3:44:56 PM	0.0	0.0	0.0	73.8	75.5	99.4	

Event #13 Logging Parameters

Model Number: Q-300
Firmware: 2.60
Serial Number: QC3010143
Start Time: 7/1/04 3:29:56 PM
Stop Time: 7/1/04 3:45:59 PM
Logging Interval: 0:01:00
Meter Range: 70 - 140dB
Projected Period: 8:00

Parameters for Dosimeters 1 through 3

Weighting:	A	A	A
Threshold:	80dB	90dB	80dB
Exchange Rate:	5dB	5dB	3dB
Criterion:	90dB	90dB	85dB
Time Constant:	Slow	Slow	Slow
Upper Limit:	115dB	115dB	115dB
LDN:	Off		

Event #13 Values

Run Time:	0:16:02		
Peak Level:	117.4dB	117.4dB	117.4dB
	7/1/04 3:32:15 PM	7/1/04 3:32:15 PM	7/1/04 3:32:15 PM
Max Level:	91.7dB (Slow)	91.7dB (Slow)	91.7dB (Slow)
	7/1/04 3:32:14 PM	7/1/04 3:32:14 PM	7/1/04 3:32:14 PM
Min Level:	69.9dB (Slow)	69.9dB (Slow)	69.9dB (Slow)
	7/1/04 3:29:56 PM	7/1/04 3:29:56 PM	7/1/04 3:29:56 PM
LAVG:	48.3dB	42.0dB	64.4dB
TWA:	23.8dB	17.5dB	49.6dB
TWA [8:00]:	48.3dB	42.0dB	64.4dB
Dose:	0.01%	0.00%	0.03%
Dose [8]:	0.30%	0.00%	0.60%
Dose [8:00]:	0.30%	0.00%	0.60%
SEL (E/R):	97.8dB	91.5dB	94.2dB
Overload:	0.0%		
Pa2Sec:			1.0

Event #13 Comments:

Sibley Hospital - Dalecarlia Reservoir

03:31 Passenger car & Truck

03:32 Motor bike

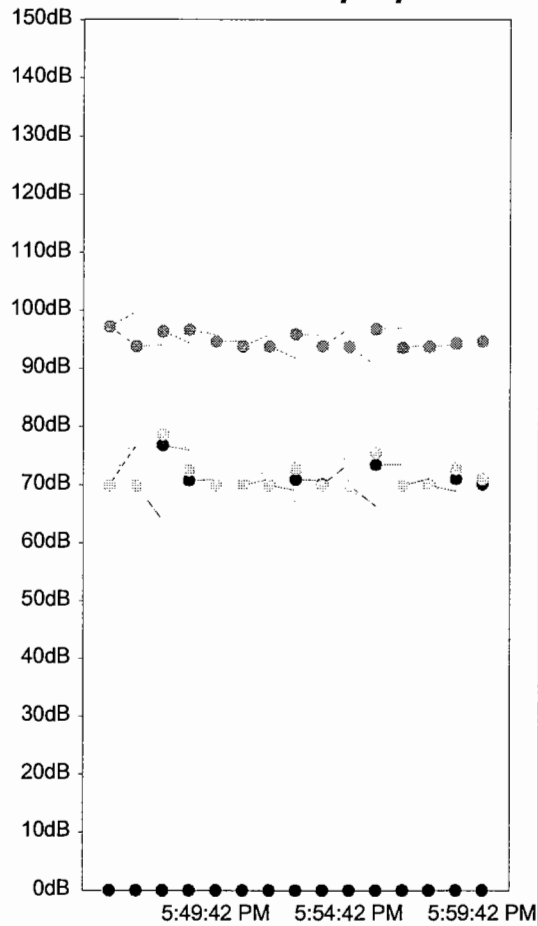
03:34 Passenger car & Truck

03:35 Truck

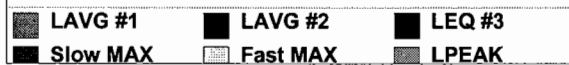
03:38 Passenger car & Truck

03:47 Airplane

Event #14 with 1 Sample per Division



Logged between 7/1/04 5:45:42 PM and 7/1/04 6:00:57 PM at 0:01:00 intervals



Event #14 with 1 Sample per Division

Time	LAVG #1	LAVG #2	LEQ #3	Slow MAX	Fast MAX	LPEAK	Comment (double click to edit)
5:45:42 PM	0.0	0.0	0.0	69.9	69.9	97.2	
5:46:42 PM	0.0	0.0	0.0	69.9	69.9	93.8	
5:47:42 PM	0.0	0.0	0.0	76.8	78.7	96.4	Air plane
5:48:42 PM	0.0	0.0	0.0	70.8	72.5	96.7	
5:49:42 PM	0.0	0.0	0.0	69.9	69.9	94.7	
5:50:42 PM	0.0	0.0	0.0	70.0	70.0	93.8	
5:51:42 PM	0.0	0.0	0.0	69.9	69.9	93.8	
5:52:42 PM	0.0	0.0	0.0	70.9	72.8	95.9	
5:53:42 PM	0.0	0.0	0.0	70.1	69.9	93.9	
5:54:42 PM	0.0	0.0	0.0	69.9	69.9	93.7	
5:55:42 PM	0.0	0.0	0.0	73.5	75.5	96.8	Air plane
5:56:42 PM	0.0	0.0	0.0	69.9	69.9	93.6	
5:57:42 PM	0.0	0.0	0.0	69.9	69.9	93.8	
5:58:42 PM	0.0	0.0	0.0	71.1	72.8	94.4	
5:59:42 PM	0.0	0.0	0.0	70.1	71.0	94.7	Air plane

Event #14 Logging Parameters

Model Number: Q-300
Firmware: 2.60
Serial Number: QC3010143
Start Time: 7/1/04 5:45:42 PM
Stop Time: 7/1/04 6:00:57 PM
Logging Interval: 0:01:00
Meter Range: 70 - 140dB
Projected Period: 8:00

Parameters for Dosimeters 1 through 3

Weighting:	A	A	A
Threshold:	80dB	90dB	80dB
Exchange Rate:	5dB	5dB	3dB
Criterion:	90dB	90dB	85dB
Time Constant:	Slow	Slow	Slow
Upper Limit:	115dB	115dB	115dB
LDN:	Off		

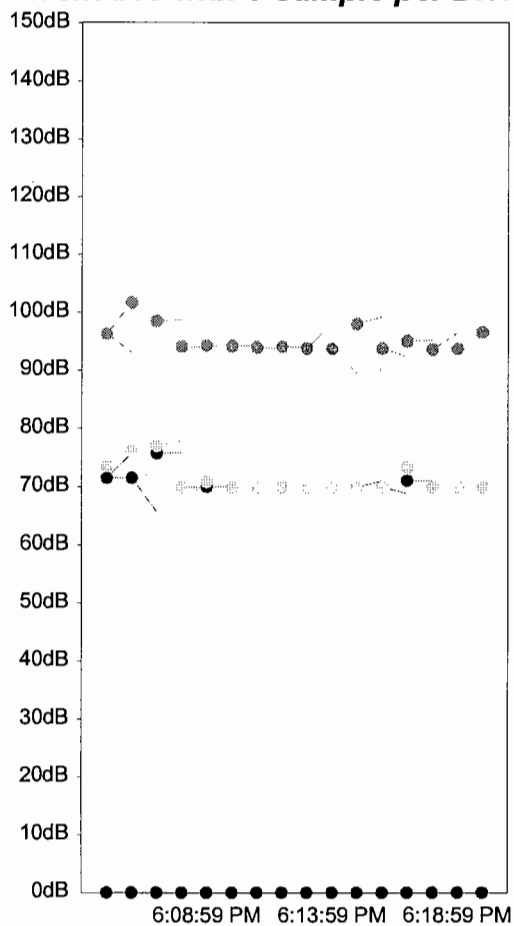
Event #14 Values

Run Time:	0:15:14		
Peak Level:	97.2dB	97.2dB	97.2dB
	7/1/04 5:45:43 PM	7/1/04 5:45:43 PM	7/1/04 5:45:43 PM
Max Level:	76.8dB (Slow)	76.8dB (Slow)	76.8dB (Slow)
	7/1/04 5:48:16 PM	7/1/04 5:48:16 PM	7/1/04 5:48:16 PM
Min Level:	69.9dB (Slow)	69.9dB (Slow)	69.9dB (Slow)
	7/1/04 5:45:42 PM	7/1/04 5:45:42 PM	7/1/04 5:45:42 PM
LAVG:	0.0dB	0.0dB	0.0dB
TWA:	0.0dB	0.0dB	0.0dB
TWA [8:00]:	0.0dB	0.0dB	0.0dB
Dose:	0.00%	0.00%	0.00%
Dose [8]:	0.00%	0.00%	0.00%
Dose [8:00]:	0.00%	0.00%	0.00%
SEL (E/R):	0.0dB	0.0dB	0.0dB
Overload:	0.0%		
Pa2Sec:			0.0

Event #14 Comments:
Georgetown Reservoir

- 05:48 Airplane
- 05:49 Helicopter
- 05:51 Airplane
- 05:56 Airplane
- 05:59 Airplane
- 06:00 Airplane

Event #15 with 1 Sample per Division



Logged between 7/1/04 6:04:59 PM and 7/1/04 6:21:06 PM at 0:01:00 intervals

	LAVG #1		LAVG #2		LEQ #3
	Slow MAX		Fast MAX		LPEAK

Event #15 with 1 Sample per Division

Time	LAVG #1	LAVG #2	LEQ #3	Slow MAX	Fast MAX	LPEAK	Comment (double click to edit)
6:04:59 PM	0.0	0.0	0.0	71.5	73.6	96.3	
6:05:59 PM	0.0	0.0	0.0	71.5	76.1	101.7	
6:06:59 PM	0.0	0.0	0.0	75.8	77.0	98.5	<i>Amplifier</i>
6:07:59 PM	0.0	0.0	0.0	69.9	69.9	94.1	
6:08:59 PM	0.0	0.0	0.0	70.0	70.8	94.3	
6:09:59 PM	0.0	0.0	0.0	69.9	69.9	94.2	
6:10:59 PM	0.0	0.0	0.0	69.9	69.9	94.0	
6:11:59 PM	0.0	0.0	0.0	69.9	69.9	94.1	
6:12:59 PM	0.0	0.0	0.0	69.9	69.9	93.8	
6:13:59 PM	0.0	0.0	0.0	69.9	69.9	93.7	
6:14:59 PM	0.0	0.0	0.0	69.9	69.9	98.0	
6:15:59 PM	0.0	0.0	0.0	69.9	69.9	93.8	
6:16:59 PM	0.0	0.0	0.0	71.0	73.3	95.1	
6:17:59 PM	0.0	0.0	0.0	69.9	69.9	93.6	
6:18:59 PM	0.0	0.0	0.0	69.9	69.9	93.7	
6:19:59 PM	0.0	0.0	0.0	69.9	69.9	96.6	

Event #15 Logging Parameters

Model Number: Q-300
Firmware: 2.60
Serial Number: QC3010143
Start Time: 7/1/04 6:04:59 PM
Stop Time: 7/1/04 6:21:06 PM
Logging Interval: 0:01:00
Meter Range: 70 - 140dB
Projected Period: 8:00

Parameters for Dosimeters 1 through 3

Weighting:	A	A	A
Threshold:	80dB	90dB	80dB
Exchange Rate:	5dB	5dB	3dB
Criterion:	90dB	90dB	85dB
Time Constant:	Slow	Slow	Slow
Upper Limit:	115dB	115dB	115dB
LDN:	Off		

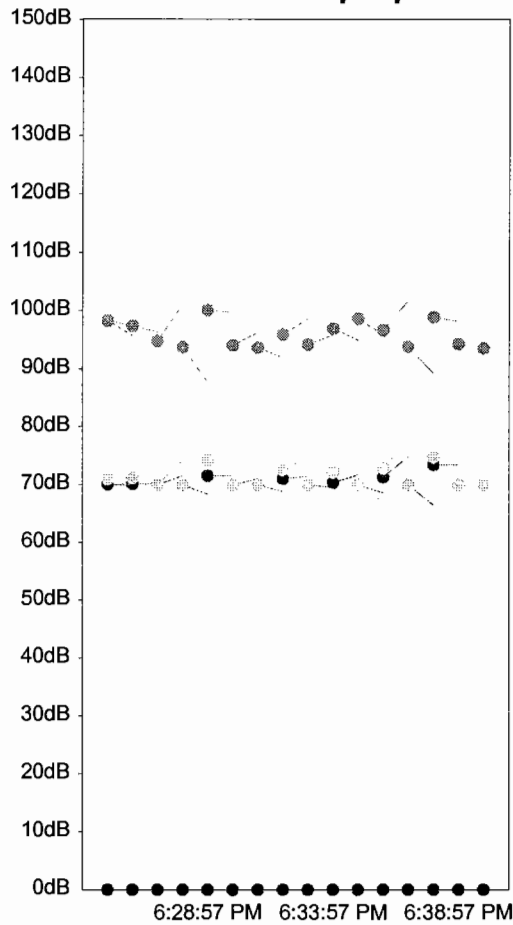
Event #15 Values

Run Time:	0:16:07		
Peak Level:	108.6dB	108.6dB	108.6dB
	7/1/04 6:21:03 PM	7/1/04 6:21:03 PM	7/1/04 6:21:03 PM
Max Level:	79.6dB (Slow)	79.6dB (Slow)	79.6dB (Slow)
	7/1/04 6:21:06 PM	7/1/04 6:21:06 PM	7/1/04 6:21:06 PM
Min Level:	69.9dB (Slow)	69.9dB (Slow)	69.9dB (Slow)
	7/1/04 6:05:08 PM	7/1/04 6:05:08 PM	7/1/04 6:05:08 PM
LAVG:	0.0dB	0.0dB	0.0dB
TWA:	0.0dB	0.0dB	0.0dB
TWA [8:00]:	0.0dB	0.0dB	0.0dB
Dose:	0.00%	0.00%	0.00%
Dose [8]:	0.00%	0.00%	0.00%
Dose [8:00]:	0.00%	0.00%	0.00%
SEL (E/R):	0.0dB	0.0dB	0.0dB
Overload:	0.0%		
Pa2Sec:			0.0

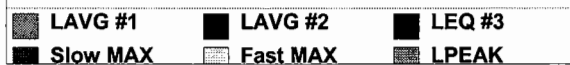
Event #15 Comments:
Georgetown Reservoir

06:05 Airplane
06:07 Airplane
06:09 Airplane
06:17 Airplane

Event #16 with 1 Sample per Division



Logged between 7/1/04 6:24:57 PM and 7/1/04 6:40:57 PM at 0:01:00 intervals



Event #16 with 1 Sample per Division

Time	LAVG #1	LAVG #2	LEQ #3	Slow MAX	Fast MAX	LPEAK	Comment (double click to edit)
6:24:57 PM	0.0	0.0	0.0	70.0	70.9	98.3	
6:25:57 PM	0.0	0.0	0.0	70.1	71.1	97.4	
6:26:57 PM	0.0	0.0	0.0	69.9	69.9	94.9	
6:27:57 PM	0.0	0.0	0.0	69.9	69.9	93.8	
6:28:57 PM	0.0	0.0	0.0	71.5	74.2	100.1	✓ Airplane
6:29:57 PM	0.0	0.0	0.0	69.9	69.9	94.1	
6:30:57 PM	0.0	0.0	0.0	69.9	69.9	93.7	
6:31:57 PM	0.0	0.0	0.0	71.0	72.5	95.9	
6:32:57 PM	0.0	0.0	0.0	69.9	69.9	94.2	
6:33:57 PM	0.0	0.0	0.0	70.3	72.1	97.0	
6:34:57 PM	0.0	0.0	0.0	69.9	69.9	98.7	
6:35:57 PM	0.0	0.0	0.0	71.3	72.8	96.7	
6:36:57 PM	0.0	0.0	0.0	69.9	69.9	93.9	
6:37:57 PM	0.0	0.0	0.0	73.4 ✓	74.7	98.9	Airplane
6:38:57 PM	0.0	0.0	0.0	69.9	69.9	94.3	
6:39:57 PM	0.0	0.0	0.0	69.9	69.9	93.6	

Event #16 Logging Parameters

Model Number: Q-300
Firmware: 2.60
Serial Number: QC3010143
Start Time: 7/1/04 6:24:57 PM
Stop Time: 7/1/04 6:40:57 PM
Logging Interval: 0:01:00
Meter Range: 70 - 140dB
Projected Period: 8:00

Parameters for Dosimeters 1 through 3

Weighting:	A	A	A
Threshold:	80dB	90dB	80dB
Exchange Rate:	5dB	5dB	3dB
Criterion:	90dB	90dB	85dB
Time Constant:	Slow	Slow	Slow
Upper Limit:	115dB	115dB	115dB
LDN:	Off		

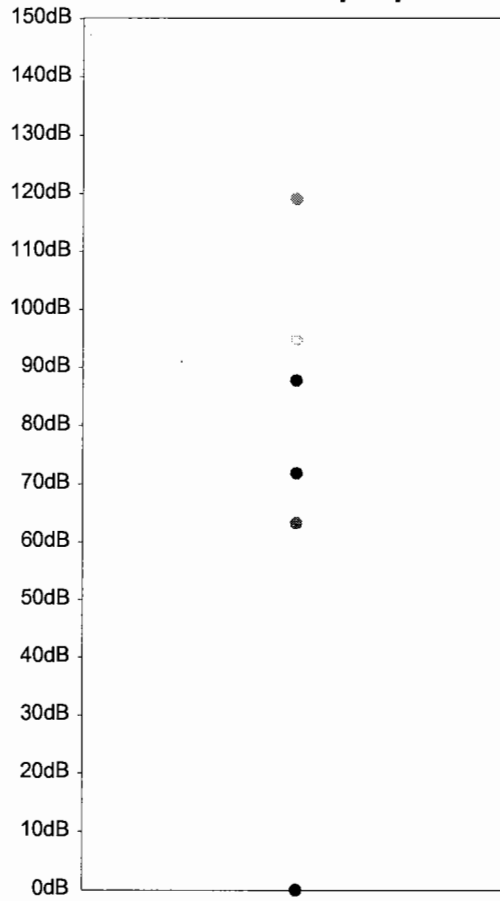
Event #16 Values

Run Time:	0:16:00		
Peak Level:	100.1dB	100.1dB	100.1dB
	7/1/04 6:29:16 PM	7/1/04 6:29:16 PM	7/1/04 6:29:16 PM
Max Level:	73.4dB (Slow)	73.4dB (Slow)	73.4dB (Slow)
	7/1/04 6:38:06 PM	7/1/04 6:38:06 PM	7/1/04 6:38:06 PM
Min Level:	69.9dB (Slow)	69.9dB (Slow)	69.9dB (Slow)
	7/1/04 6:24:57 PM	7/1/04 6:24:57 PM	7/1/04 6:24:57 PM
LAVG:	0.0dB	0.0dB	0.0dB
TWA:	0.0dB	0.0dB	0.0dB
TWA [8:00]:	0.0dB	0.0dB	0.0dB
Dose:	0.00%	0.00%	0.00%
Dose [8]:	0.00%	0.00%	0.00%
Dose [8:00]:	0.00%	0.00%	0.00%
SEL (E/R):	0.0dB	0.0dB	0.0dB
Overload:	0.0%		
Pa2Sec:			0.0







Event #16 Comments:
Goergetown Reservoir

06:26 Airplane
06:29 Airplane
06:32 Airplane
06:34 Airplane
06:36 Airplane
06:38 Airplane
06:39 Ambulance

Event #17 with 1 Sample per Division



Logged between 7/2/04 12:13:57 AM and 7/2/04 12:15:46 AM at 0:01:00 intervals

 LAVG #1	 LAVG #2	 LEQ #3
 Slow MAX	 Fast MAX	 LPEAK

Event #17 with 1 Sample per Division

Time	LAVG #1	LAVG #2	LEQ #3	Slow MAX	Fast MAX	LPEAK	Comment (double click to edit)
12:13:57 AM	63.3	0.0	71.9	87.8	94.8	119.1	

Event #17 Logging Parameters

Model Number: Q-300
Firmware: 2.60
Serial Number: QC3010143
Start Time: 7/2/04 12:13:57 AM
Stop Time: 7/2/04 12:15:46 AM
Logging Interval: 0:01:00
Meter Range: 70 - 140dB
Projected Period: 8:00

Parameters for Dosimeters 1 through 3

Weighting:	A	A	A
Threshold:	80dB	90dB	80dB
Exchange Rate:	5dB	5dB	3dB
Criterion:	90dB	90dB	85dB
Time Constant:	Slow	Slow	Slow
Upper Limit:	115dB	115dB	115dB
LDN:	Off		

Event #17 Values

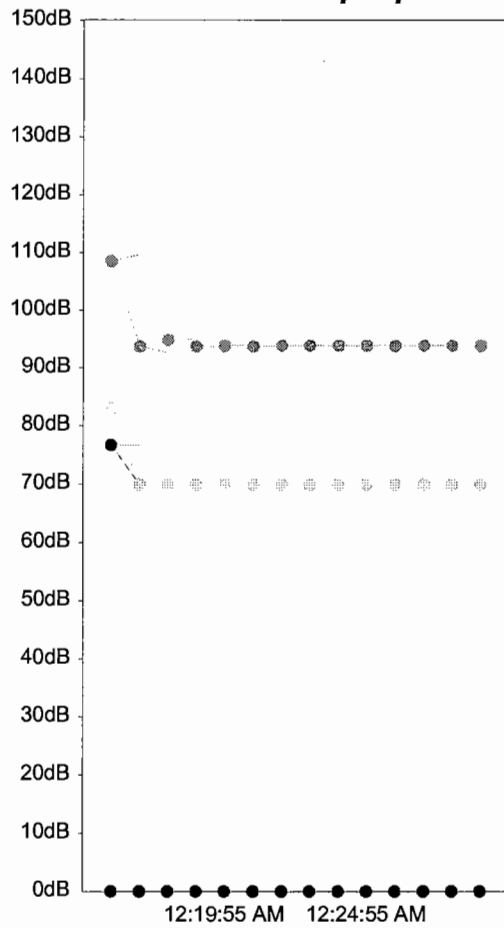
Run Time:	0:01:48		
Peak Level:	119.1dB	119.1dB	119.1dB
	7/2/04 12:14:08 AM	7/2/04 12:14:08 AM	7/2/04 12:14:08 AM
Max Level:	87.8dB (Slow)	87.8dB (Slow)	87.8dB (Slow)
	7/2/04 12:14:07 AM	7/2/04 12:14:07 AM	7/2/04 12:14:07 AM
Min Level:	69.9dB (Slow)	69.9dB (Slow)	69.9dB (Slow)
	7/2/04 12:13:57 AM	7/2/04 12:13:57 AM	7/2/04 12:13:57 AM
LAVG:	59.0dB	0.0dB	69.4dB
TWA:	18.7dB	0.0dB	45.1dB
TWA [8:00]:	59.0dB	0.0dB	69.4dB
Dose:	0.01%	0.00%	0.01%
Dose [8]:	0.00%	0.00%	2.67%
Dose [8:00]:	0.00%	0.00%	2.67%
SEL (E/R):	92.8dB	0.0dB	89.7dB
Overload:	0.0%		
Pa2Sec:			0.4

Event #17 Comments:

Residential Area - Dalecarlia Reservoir

12:13 This was a test Event !!!!!

Event #18 with 1 Sample per Division



Logged between 7/2/04 12:15:55 AM and 7/2/04 12:30:44 AM at 0:01:00 intervals

LAVG #1	LAVG #2	LEQ #3
Slow MAX	Fast MAX	LPEAK

Event #18 with 1 Sample per Division

Time	LAVG #1	LAVG #2	LEQ #3	Slow MAX	Fast MAX	LPEAK	Comment (double click to edit)
12:15:55 AM	0.0	0.0	0.0	76.7 ✓	83.0	108.5 ✓	Air Conditioning Sys
12:16:55 AM	0.0	0.0	0.0	69.9	69.9	93.7	
12:17:55 AM	0.0	0.0	0.0	69.9	69.9	94.8	
12:18:55 AM	0.0	0.0	0.0	69.9	69.9	93.7	
12:19:55 AM	0.0	0.0	0.0	69.9	69.9	93.8	
12:20:55 AM	0.0	0.0	0.0	69.9	69.9	93.7	
12:21:55 AM	0.0	0.0	0.0	69.9	69.9	93.9	
12:22:55 AM	0.0	0.0	0.0	69.9	69.9	93.9	
12:23:55 AM	0.0	0.0	0.0	69.9	69.9	93.9	
12:24:55 AM	0.0	0.0	0.0	69.9	69.9	93.9	
12:25:55 AM	0.0	0.0	0.0	69.9	69.9	93.8	
12:26:55 AM	0.0	0.0	0.0	69.9	69.9	93.9	
12:27:55 AM	0.0	0.0	0.0	69.9	69.9	93.9	
12:28:55 AM	0.0	0.0	0.0	69.9	69.9	93.9	

Event #18 Logging Parameters

Model Number: Q-300
Firmware: 2.60
Serial Number: QC3010143
Start Time: 7/2/04 12:15:55 AM
Stop Time: 7/2/04 12:30:44 AM
Logging Interval: 0:01:00
Meter Range: 70 - 140dB
Projected Period: 8:00

Parameters for Dosimeters 1 through 3

Weighting:	A	A	A
Threshold:	80dB	90dB	80dB
Exchange Rate:	5dB	5dB	3dB
Criterion:	90dB	90dB	85dB
Time Constant:	Slow	Slow	Slow
Upper Limit:	115dB	115dB	115dB
LDN:	Off		

Event #18 Values

Run Time:	0:14:48		
Peak Level:	108.5dB	108.5dB	108.5dB
	7/2/04 12:16:06 AM	7/2/04 12:16:06 AM	7/2/04 12:16:06 AM
Max Level:	76.7dB (Slow)	76.7dB (Slow)	76.7dB (Slow)
	7/2/04 12:16:05 AM	7/2/04 12:16:05 AM	7/2/04 12:16:05 AM
Min Level:	69.9dB (Slow)	69.9dB (Slow)	69.9dB (Slow)
	7/2/04 12:15:55 AM	7/2/04 12:15:55 AM	7/2/04 12:15:55 AM
LAVG:	0.0dB	0.0dB	0.0dB
TWA:	0.0dB	0.0dB	0.0dB
TWA [8:00]:	0.0dB	0.0dB	0.0dB
Dose:	0.00%	0.00%	0.00%
Dose [8]:	0.00%	0.00%	0.00%
Dose [8:00]:	0.00%	0.00%	0.00%
SEL (E/R):	0.0dB	0.0dB	0.0dB
Overload:	0.0%		
Pa2Sec:			0.0

Event #18 Comments:

Residential Area - Dalecarlia Reservoir

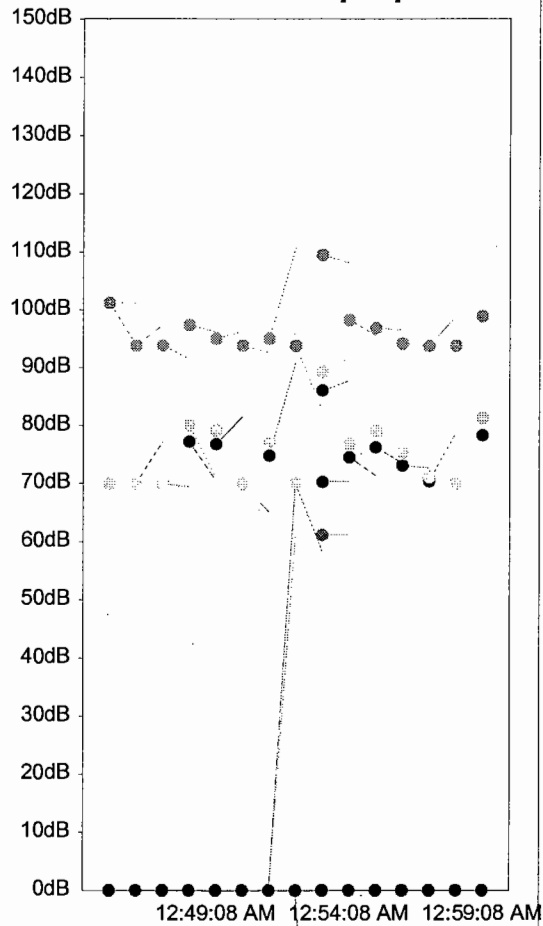
12:16 Air conditioning system turned On

12:21 Air conditioning system turned Off

12:24 Air conditioning system turned On

12:29 Air conditioning system turned Off

Event #19 with 1 Sample per Division



Logged between 7/2/04 12:45:08 AM and 7/2/04 1:00:18 AM at 0:01:00 intervals

LAVG #1	LAVG #2	LEQ #3
Slow MAX	Fast MAX	LPEAK

Event #19 with 1 Sample per Division

Time	LAVG #1	LAVG #2	LEQ #3	Slow MAX	Fast MAX	LPEAK	Comment (double click to edit)
12:45:08 AM	0.0	0.0	0.0	70.0	70.0	101.2	
12:46:08 AM	0.0	0.0	0.0	69.9	69.9	93.9	
12:47:08 AM	0.0	0.0	0.0	69.9	69.9	93.9	
12:48:08 AM	0.0	0.0	0.0	77.2	80.1	97.4	
12:49:08 AM	0.0	0.0	0.0	76.7	79.2	95.1	
12:50:08 AM	0.0	0.0	0.0	69.9	69.9	93.9	
12:51:08 AM	0.0	0.0	0.0	74.8	77.1	95.1	
12:52:08 AM	0.0	0.0	0.0	69.9	69.9	93.8	
12:53:08 AM	61.2	0.0	70.3	86.1 ✓	89.4	109.5 ✓	Bus going East (uphill)
12:54:08 AM	0.0	0.0	0.0	74.5	76.8	98.3	
12:55:08 AM	0.0	0.0	0.0	76.2	79.1	96.9	
12:56:08 AM	0.0	0.0	0.0	73.0	75.2	94.2	
12:57:08 AM	0.0	0.0	0.0	70.3	71.0	93.8	
12:58:08 AM	0.0	0.0	0.0	69.9	69.9	93.8	
12:59:08 AM	0.0	0.0	0.0	78.3	81.3	98.9	

Event #19 Logging Parameters

Model Number: Q-300
Firmware: 2.60
Serial Number: QC3010143
Start Time: 7/2/04 12:45:08 AM
Stop Time: 7/2/04 1:00:18 AM
Logging Interval: 0:01:00
Meter Range: 70 - 140dB
Projected Period: 8:00

Parameters for Dosimeters 1 through 3

Weighting:	A	A	A
Threshold:	80dB	90dB	80dB
Exchange Rate:	5dB	5dB	3dB
Criterion:	90dB	90dB	85dB
Time Constant:	Slow	Slow	Slow
Upper Limit:	115dB	115dB	115dB
LDN:	Off		

Event #19 Values

Run Time:	0:15:09		
Peak Level:	109.5dB	109.5dB	109.5dB
	7/2/04 12:54:02 AM	7/2/04 12:54:02 AM	7/2/04 12:54:02 AM
Max Level:	86.1dB (Slow)	86.1dB (Slow)	86.1dB (Slow)
	7/2/04 12:54:01 AM	7/2/04 12:54:01 AM	7/2/04 12:54:01 AM
Min Level:	69.9dB (Slow)	69.9dB (Slow)	69.9dB (Slow)
	7/2/04 12:45:09 AM	7/2/04 12:45:09 AM	7/2/04 12:45:09 AM
LAVG:	41.6dB	0.0dB	58.5dB
TWA:	16.7dB	0.0dB	43.5dB
TWA [8:00]:	41.6dB	0.0dB	58.5dB
Dose:	0.00%	0.00%	0.01%
Dose [8]:	0.00%	0.00%	0.00%
Dose [8:00]:	0.00%	0.00%	0.00%
SEL (E/R):	90.7dB	0.0dB	88.1dB
Overload:	0.0%		
Pa2Sec:			0.3

Event #19 Comments:

Sibley Hospital

12:48 2 cars going East&West

12:49 Car going East

12:51 Car going East

12:52 Car going West

12:53 Bus going East

12:54 Car going East

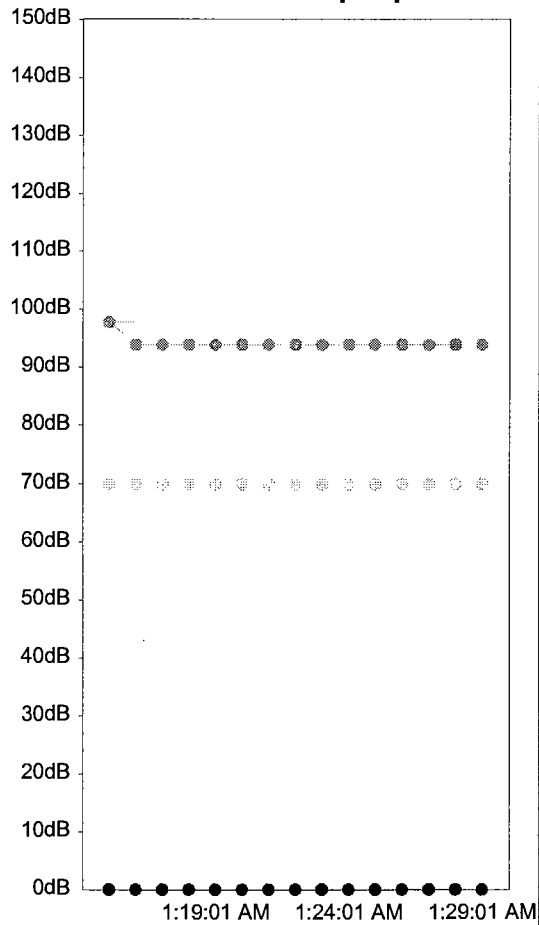
12:55 2 cars going East

12:56 Car going West

12:57 2 cars going East&West

12:59 Car going East

Event #20 with 1 Sample per Division



Logged between 7/2/04 1:15:01 AM and 7/2/04 1:30:14 AM at 0:01:00 intervals

LAVG #1	LAVG #2	LAVG #3
Slow MAX	Fast MAX	LPEAK

Event #20 with 1 Sample per Division

Time	LAVG #1	LAVG #2	LEQ #3	Slow MAX	Fast MAX	LPEAK	Comment (double click to edit)
1:15:01 AM	0.0	0.0	0.0	69.9	69.9 ✓	97.8 ✓	
1:16:01 AM	0.0	0.0	0.0	69.9	69.9	93.9	
1:17:01 AM	0.0	0.0	0.0	69.9	69.9	93.9	
1:18:01 AM	0.0	0.0	0.0	69.9	69.9	93.9	
1:19:01 AM	0.0	0.0	0.0	69.9	69.9	93.9	
1:20:01 AM	0.0	0.0	0.0	69.9	69.9	93.9	
1:21:01 AM	0.0	0.0	0.0	69.9	69.9	93.9	
1:22:01 AM	0.0	0.0	0.0	69.9	69.9	93.9	
1:23:01 AM	0.0	0.0	0.0	69.9	69.9	93.9	
1:24:01 AM	0.0	0.0	0.0	69.9	69.9	93.9	
1:25:01 AM	0.0	0.0	0.0	69.9	69.9	93.9	
1:26:01 AM	0.0	0.0	0.0	69.9	69.9	93.9	
1:27:01 AM	0.0	0.0	0.0	69.9	69.9	93.9	
1:28:01 AM	0.0	0.0	0.0	69.9	69.9	93.9	
1:29:01 AM	0.0	0.0	0.0	69.9	69.9	93.9	Air Conditioning Sp - ON

Event #20 Logging Parameters

Model Number: Q-300
Firmware: 2.60
Serial Number: QC3010143
Start Time: 7/2/04 1:15:01 AM
Stop Time: 7/2/04 1:30:14 AM
Logging Interval: 0:01:00
Meter Range: 70 - 140dB
Projected Period: 8:00

Parameters for Dosimeters 1 through 3

Weighting:	A	A	A
Threshold:	80dB	90dB	80dB
Exchange Rate:	5dB	5dB	3dB
Criterion:	90dB	90dB	85dB
Time Constant:	Slow	Slow	Slow
Upper Limit:	115dB	115dB	115dB
LDN:	Off		

Event #20 Values

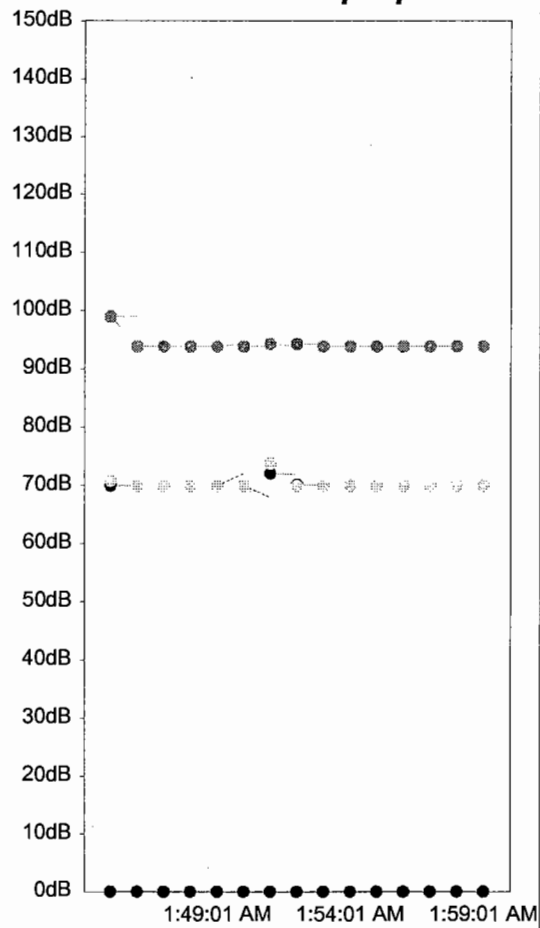
Run Time:	0:15:13		
Peak Level:	97.8dB	97.8dB	97.8dB
	7/2/04 1:15:02 AM	7/2/04 1:15:02 AM	7/2/04 1:15:02 AM
Max Level:	69.9dB (Slow)	69.9dB (Slow)	69.9dB (Slow)
	7/2/04 1:15:01 AM	7/2/04 1:15:01 AM	7/2/04 1:15:01 AM
Min Level:	69.9dB (Slow)	69.9dB (Slow)	69.9dB (Slow)
	7/2/04 1:15:01 AM	7/2/04 1:15:01 AM	7/2/04 1:15:01 AM
LAVG:	0.0dB	0.0dB	0.0dB
TWA:	0.0dB	0.0dB	0.0dB
TWA [8:00]:	0.0dB	0.0dB	0.0dB
Dose:	0.00%	0.00%	0.00%
Dose [8]:	0.00%	0.00%	0.00%
Dose [8:00]:	0.00%	0.00%	0.00%
SEL (E/R):	0.0dB	0.0dB	0.0dB
Overload:	0.0%		
Pa2Sec:			0.0

Event #20 Comments:

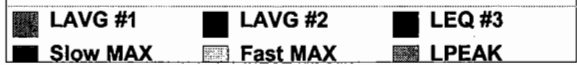
Residential Area - Dalecarlia Reservoir

01:30 Air conditioning system turned on

Event #21 with 1 Sample per Division



Logged between 7/2/04 1:45:01 AM and 7/2/04 2:00:08 AM at 0:01:00 intervals



Event #21 with 1 Sample per Division

Time	LAVG #1	LAVG #2	LEQ #3	Slow MAX	Fast MAX	LPEAK	Comment (double click to edit)
1:45:01 AM	0.0	0.0	0.0	70.0	70.8	99.0	
1:46:01 AM	0.0	0.0	0.0	69.9	69.9	93.9	
1:47:01 AM	0.0	0.0	0.0	69.9	69.9	93.9	
1:48:01 AM	0.0	0.0	0.0	69.9	69.9	93.9	
1:49:01 AM	0.0	0.0	0.0	69.9	69.9	93.9	
1:50:01 AM	0.0	0.0	0.0	69.9	69.9	93.9	
1:51:01 AM	0.0	0.0	0.0	72.1	73.8	94.3	
1:52:01 AM	0.0	0.0	0.0	70.1	69.9	94.3	
1:53:01 AM	0.0	0.0	0.0	69.9	69.9	93.9	
1:54:01 AM	0.0	0.0	0.0	69.9	69.9	93.9	
1:55:01 AM	0.0	0.0	0.0	69.9	69.9	93.9	
1:56:01 AM	0.0	0.0	0.0	69.9	69.9	93.9	
1:57:01 AM	0.0	0.0	0.0	69.9	69.9	93.9	
1:58:01 AM	0.0	0.0	0.0	69.9	69.9	93.9	
1:59:01 AM	0.0	0.0	0.0	69.9	69.9	93.9	

Event #21 Logging Parameters

Model Number: Q-300
Firmware: 2.60
Serial Number: QC3010143
Start Time: 7/2/04 1:45:01 AM
Stop Time: 7/2/04 2:00:08 AM
Logging Interval: 0:01:00
Meter Range: 70 - 140dB
Projected Period: 8:00

Parameters for Dosimeters 1 through 3

Weighting:	A	A	A
Threshold:	80dB	90dB	80dB
Exchange Rate:	5dB	5dB	3dB
Criterion:	90dB	90dB	85dB
Time Constant:	Slow	Slow	Slow
Upper Limit:	115dB	115dB	115dB
LDN:	Off		

Event #21 Values

Run Time:	0:15:06		
Peak Level:	99.0dB	99.0dB	99.0dB
	7/2/04 1:45:02 AM	7/2/04 1:45:02 AM	7/2/04 1:45:02 AM
Max Level:	72.1dB (Slow)	72.1dB (Slow)	72.1dB (Slow)
	7/2/04 1:51:57 AM	7/2/04 1:51:57 AM	7/2/04 1:51:57 AM
Min Level:	69.9dB (Slow)	69.9dB (Slow)	69.9dB (Slow)
	7/2/04 1:45:01 AM	7/2/04 1:45:01 AM	7/2/04 1:45:01 AM
LAVG:	0.0dB	0.0dB	0.0dB
TWA:	0.0dB	0.0dB	0.0dB
TWA [8:00]:	0.0dB	0.0dB	0.0dB
Dose:	0.00%	0.00%	0.00%
Dose [8]:	0.00%	0.00%	0.00%
Dose [8:00]:	0.00%	0.00%	0.00%
SEL (E/R):	0.0dB	0.0dB	0.0dB
Overload:	0.0%		
Pa2Sec:			0.0

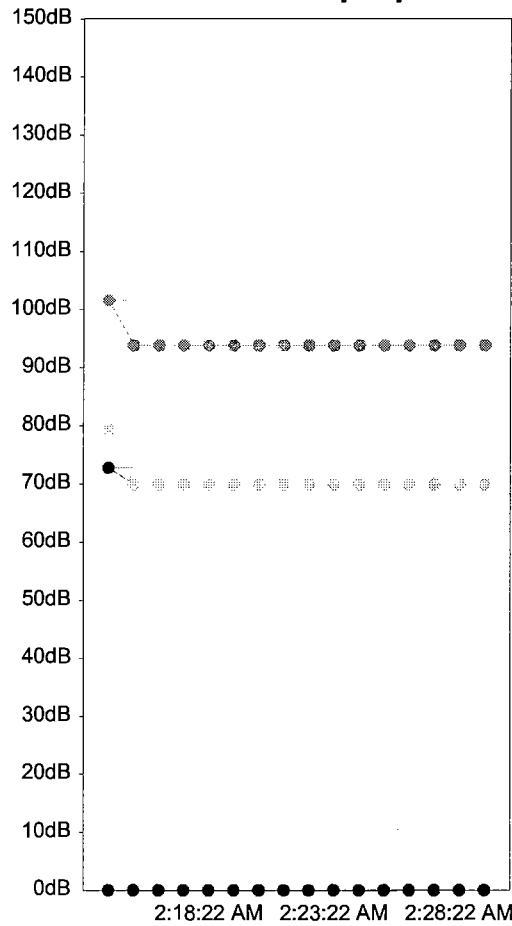
Event #21 Comments:

Sibley Hospital - Dalecarlia Reservoir

01:51 Car going West

01:52 Car going West

Event #22 with 1 Sample per Division



Logged between 7/2/04 2:14:22 AM and 7/2/04 2:31:05 AM at 0:01:00 intervals

LAVG #1	LAVG #2	LEQ #3
Slow MAX	Fast MAX	LPEAK

Event #22 with 1 Sample per Division

Time	LAVG #1	LAVG #2	LEQ #3	Slow MAX	Fast MAX	LPEAK	Comment (double click to edit)
2:14:22 AM	0.0	0.0	0.0	72.8	79.3	101.6	
2:15:22 AM	0.0	0.0	0.0	69.9	69.9	93.9	
2:16:22 AM	0.0	0.0	0.0	69.9	69.9	93.9	
2:17:22 AM	0.0	0.0	0.0	69.9	69.9	93.9	
2:18:22 AM	0.0	0.0	0.0	69.9	69.9	93.9	
2:19:22 AM	0.0	0.0	0.0	69.9	69.9	93.9	
2:20:22 AM	0.0	0.0	0.0	69.9	69.9	93.9	
2:21:22 AM	0.0	0.0	0.0	69.9	69.9	93.9	
2:22:22 AM	0.0	0.0	0.0	69.9	69.9	93.9	
2:23:22 AM	0.0	0.0	0.0	69.9	69.9	93.9	
2:24:22 AM	0.0	0.0	0.0	69.9	69.9	93.9	
2:25:22 AM	0.0	0.0	0.0	69.9	69.9	93.9	
2:26:22 AM	0.0	0.0	0.0	69.9	69.9	93.9	
2:27:22 AM	0.0	0.0	0.0	69.9	69.9	93.9	
2:28:22 AM	0.0	0.0	0.0	69.9	69.9	93.9	
2:29:22 AM	0.0	0.0	0.0	69.9	69.9	93.9	

Event #22 Logging Parameters

Model Number: Q-300
Firmware: 2.60
Serial Number: QC3010143
Start Time: 7/2/04 2:14:22 AM
Stop Time: 7/2/04 2:31:05 AM
Logging Interval: 0:01:00
Meter Range: 70 - 140dB
Projected Period: 8:00

Parameters for Dosimeters 1 through 3

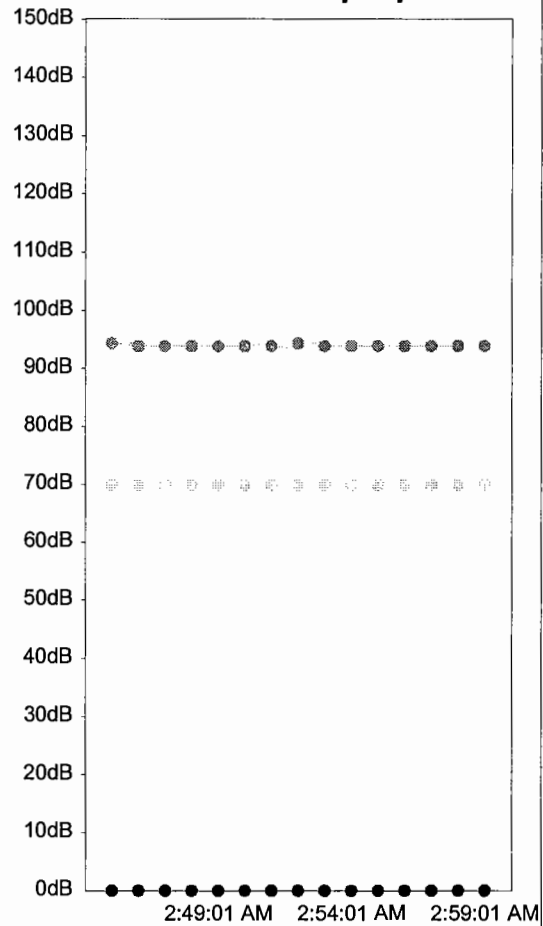
Weighting:	A	A	A
Threshold:	80dB	90dB	80dB
Exchange Rate:	5dB	5dB	3dB
Criterion:	90dB	90dB	85dB
Time Constant:	Slow	Slow	Slow
Upper Limit:	115dB	115dB	115dB
LDN:	Off		

Event #22 Values

Run Time:	0:16:42		
Peak Level:	101.6dB	101.6dB	101.6dB
	7/2/04 2:14:23 AM	7/2/04 2:14:23 AM	7/2/04 2:14:23 AM
Max Level:	72.8dB (Slow)	72.8dB (Slow)	72.8dB (Slow)
	7/2/04 2:14:22 AM	7/2/04 2:14:22 AM	7/2/04 2:14:22 AM
Min Level:	69.9dB (Slow)	69.9dB (Slow)	69.9dB (Slow)
	7/2/04 2:14:22 AM	7/2/04 2:14:22 AM	7/2/04 2:14:22 AM
LAVG:	0.0dB	0.0dB	0.0dB
TWA:	0.0dB	0.0dB	0.0dB
TWA [8:00]:	0.0dB	0.0dB	0.0dB
Dose:	0.00%	0.00%	0.00%
Dose [8]:	0.00%	0.00%	0.00%
Dose [8:00]:	0.00%	0.00%	0.00%
SEL (E/R):	0.0dB	0.0dB	0.0dB
Overload:	0.0%		
Pa2Sec:			0.0

Event #22 Comments:
Georgetown Reservoir

Event #23 with 1 Sample per Division



Logged between 7/2/04 2:45:01 AM and 7/2/04 3:00:55 AM at 0:01:00 intervals

LAVG #1	LAVG #2	LEQ #3
Slow MAX	Fast MAX	LPEAK

Event #23 with 1 Sample per Division

Time	LAVG #1	LAVG #2	LEQ #3	Slow MAX	Fast MAX	LPEAK	Comment (double click to edit)
2:45:01 AM	0.0	0.0	0.0	69.9	69.9	94.4	
2:46:01 AM	0.0	0.0	0.0	69.9	69.9	93.9	
2:47:01 AM	0.0	0.0	0.0	69.9	69.9	93.9	
2:48:01 AM	0.0	0.0	0.0	69.9	69.9	93.9	
2:49:01 AM	0.0	0.0	0.0	69.9	69.9	93.9	
2:50:01 AM	0.0	0.0	0.0	69.9	69.9	93.9	
2:51:01 AM	0.0	0.0	0.0	69.9	69.9	93.9	
2:52:01 AM	0.0	0.0	0.0	69.9	69.9	94.4	
2:53:01 AM	0.0	0.0	0.0	69.9	69.9	93.9	
2:54:01 AM	0.0	0.0	0.0	69.9	69.9	93.9	
2:55:01 AM	0.0	0.0	0.0	69.9	69.9	93.9	
2:56:01 AM	0.0	0.0	0.0	69.9	69.9	93.9	
2:57:01 AM	0.0	0.0	0.0	69.9	69.9	93.9	
2:58:01 AM	0.0	0.0	0.0	69.9	69.9	93.9	
2:59:01 AM	0.0	0.0	0.0	69.9	69.9	93.9	

Event #23 Logging Parameters

Model Number: Q-300
Firmware: 2.60
Serial Number: QC3010143
Start Time: 7/2/04 2:45:01 AM
Stop Time: 7/2/04 3:00:55 AM
Logging Interval: 0:01:00
Meter Range: 70 - 140dB
Projected Period: 8:00

Parameters for Dosimeters 1 through 3

Weighting:	A	A	A
Threshold:	80dB	90dB	80dB
Exchange Rate:	5dB	5dB	3dB
Criterion:	90dB	90dB	85dB
Time Constant:	Slow	Slow	Slow
Upper Limit:	115dB	115dB	115dB
LDN:	Off		

Event #23 Values

Run Time:	0:15:54		
Peak Level:	94.4dB	94.4dB	94.4dB
	7/2/04 2:45:02 AM	7/2/04 2:45:02 AM	7/2/04 2:45:02 AM
Max Level:	69.9dB (Slow)	69.9dB (Slow)	69.9dB (Slow)
	7/2/04 2:45:01 AM	7/2/04 2:45:01 AM	7/2/04 2:45:01 AM
Min Level:	69.9dB (Slow)	69.9dB (Slow)	69.9dB (Slow)
	7/2/04 2:45:01 AM	7/2/04 2:45:01 AM	7/2/04 2:45:01 AM
LAVG:	0.0dB	0.0dB	0.0dB
TWA:	0.0dB	0.0dB	0.0dB
TWA [8:00]:	0.0dB	0.0dB	0.0dB
Dose:	0.00%	0.00%	0.00%
Dose [8]:	0.00%	0.00%	0.00%
Dose [8:00]:	0.00%	0.00%	0.00%
SEL (E/R):	0.0dB	0.0dB	0.0dB
Overload:	0.0%		
Pa2Sec:			0.0

Event #23 Comments:
Goergetown Reservoir

02:52 Passenger car

Washington Aqueduct
Residual Management EIS
Noise Impacts
10/17/2004

	Average Background Noise Level (dBA)	Location	Distance Source to Receptor (ft)	Noise Level at 5 ft from Source (dBA)	Noise Level at Receptor (dBA)	Combined Impact at Receptor (dBA)	Noise Level Increase Over Background (dBA)
Dewatering Equipment	38.3	Windward Pl.	200	79.8	47.8	48.3	10
	55.6	Bike Path	50	80	60.0	61.3	5.7
Trucking	64.4	Loughboro Rd.	50	88	68.0	69.6	5.2
Construction	38.3	Windward Pl.	100	73.8	47.8	48.3	10
	40	Hutchins Pl.	70	72.4	49.5	50	10

- RONA
- AIR EMISSION ESTIMATE SUMMARY
- EMISSION ESTIMATE CALCULATIONS
- AP 42
- EPA GENERAL CONFORMITY REGULATIONS
- EPA 40 CFR (7199 ADDITION)
- MOBIL6
- MOBIL6 RESULTS

**Record of Non-Applicability (RONA)
Concerning the General Conformity Rule (40 CFR Part 51)**

The Washington Aqueduct operates the Dalecarlia and McMillan Water Treatment Plants (WTPs) in Washington, D.C., from which over 1 million persons in the D.C. and Northern Virginia area are served with potable water. The treatment process removes solid particles (e.g., river silt) from the Potomac River supply water, treats and disinfects it, and distributes the finished water to the metropolitan service area. The solids removed during the treatment process have historically been returned to the Potomac River, but a recently issued National Pollution Discharge Elimination System (NPDES) permit (Permit No. DC 0000019) has severely curtailed discharge of water treatment solids, or residuals, to the river.

Consequently, the Washington Aqueduct is in the process of evaluating water treatment residuals management options that minimize or eliminate the discharge of residuals to the river. The residuals management option that is ultimately selected has a potential to affect the human environment, and thus development of the residuals management plan must comply with the National Environmental Policy Act (NEPA).

Conformity under the Clean Air Act, Section 176(c), has been evaluated for the proposed action in accordance with 40 CFR Part 51. The proposed action includes construction and operation of a dewatering facility and trucking residuals off site for disposal. The project area is considered in nonattainment for volatile organic compounds [VOCS] and nitrogen oxides [NOx], as well as fine particulate matter [PM2.5]. PM2.5 NAAQS became effective April 5, 2005 with a 1 year grace period for PM2.5 nonattainment areas. As the PM2.5 standard covers only part of the pollutants covered by the PM10 standards, EPA has established an interim de minimis emission level of 100 tons per year for all PM2.5 nonattainment areas. The estimated direct and indirect emissions would fall below the de minimis threshold established at 40 CFR 51.853(b) of 25 tons per year of VOCs and 25 tons per year of NOx and the interim 100 tons per year for PM2.5 as documented in the following table.

POLLUTANT	EMISSIONS (TONS/YEAR)	DE MINIMIS THRESHOLD
VOC	4.3	25
NOx	20.5	25
PM2.5	0.169	100

The requirements of 40 CFR Part 51(b) are not applicable to this action because the total direct and indirect emissions of nonattainment area pollutants (volatile organic compounds [VOCS and nitrogen oxides [NOx] and fine particulate matter [PM 2.5]) associated with the proposed action would be below the de minimis threshold. Supporting documentation and emissions estimates for the project appear in the Volume 2 of the EIS.



Thomas P. Jacobus
General Manager
Washington Aqueduct

August 31, 2005

Washington Aqueduct
Residual Management EIS
Air Quality
02/17/2005

	Assumptions			HC/VOC (tpy)	CO (tpy)	NOx (tpy)	PM10 (tpy)	SO2 (tpy)
	# of Trips	Days/week	Miles/trip					
Truck Trips	20	6	150	4.3	21.3	16.8	0	0.3
From Table 7.1.1 Nontampered Exhaust Emission Rates for Low Altitude Heavy Duty Diesel Powered Vehicles - Model years 1991 or later								
Bldg Heating	Heat Input BTU/yr 3.30E+09	NG Heat Content Btu/scf 1020		0	0.065	0.152	0	0
Monofill	Area (acres) 30			0	0	0	0.36	0
	Solids Applied (tons/day) 6310	k = U = M =	0.35 12 10					
TOTALS =>				4.3	21.4	16.9	0.36	0.3

Given: Emission Factors for Heavy Duty Diesel
Powered Vehicles (AP-42, H-258, Table 2.1.1)
Model Years 1991-1997

$$\text{Hydrocarbons (HC)} = 2.1 \text{ grams/mile}$$

$$\text{Carbon Monoxide (CO)} = 10.34 \text{ grams/mile}$$

$$\text{Nitrogen Oxides (NOx)} = 8.13 \text{ grams/mile}$$

Assumptions:

$$\text{No. of truck trips} = 20 \text{ round trips/day}$$

$$\text{No. of Days/week} = 6 \text{ days}$$

$$\text{Miles Traveled} = 150 \text{ miles/round trip}$$

Example Calculation:

$$\begin{aligned} & \left[\frac{10.34 \text{ gms CO}}{\text{mile}} \right] \left[\frac{150 \text{ miles}}{\text{trip}} \right] \left[\frac{20 \text{ trips}}{\text{day}} \right] \left[\frac{6 \text{ days}}{\text{week}} \right] \left[\frac{52 \text{ weeks}}{\text{year}} \right] \\ & \left[\frac{1 \text{ pound}}{453.6 \text{ gms}} \right] \left[\frac{1 \text{ ton}}{2000 \text{ lbs}} \right] \left[\frac{2 \text{ trips}}{\text{round trip}} \right] \\ & = \underline{21.3 \text{ tons/year CO}} \end{aligned}$$

$$\frac{8.13 \text{ gms NOx}}{\text{mile}} \Rightarrow \underline{16.8 \text{ tons/year NOx}}$$

$$\frac{2.1 \text{ gms HC}}{\text{mile}} \Rightarrow \underline{4.3 \text{ tons/year HC}}$$

Sulfur Emissions based on:

$$\text{Fuel efficiency} = 30 \text{ miles/gallon}$$

$$\text{Sulfur content of fuel} = 0.02 \%$$



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Mobile Source
Emissions - Past,
Present, and Future

MOBILE Model (on-
road vehicles)

NONROAD Model
(nonroad engines,
equipment, and
vehicles)

MOVES (Motor Vehicle
Emission Simulator)

Fuels Models

AP-42: Compilation of Air Pollutant Emission Factors

[\[Introduction\]](#) [\[Highway\]](#) [\[Nonroad\]](#)

Historically, EPA has produced the report "Compilation of Air Pollutant Emission Factors." "Volume I: Stationary Point and Area Sources" is available from EPA's Office of Air Quality Planning And Standards. This document includes emission factors for "fugitive dust" on roadways. AP-42 section 13.2.1 contains emission factors for paved roads; unpaved road emission factors are in section 13.2.2.

"Volume II: Mobile Sources" (commonly referred to as "AP-42") is no longer maintained. More current mobile source emission factors are available using the Office of Transportation and Air Quality (OTAQ) [mobile source models](#).

However, for reference purposes, we continue to post parts of the most recent mobile sources AP-42 on this web page. In particular, Appendix H is still useful in documenting the emission factors produced by MOBILE5, and in some cases carried over into MOBILE6 without additional documentation.

Contact: ASD Information, phone (734) 214-4636 or email: asdinfo@epa.gov for further information and documents and other information contained on this web page.

In its first edition (1978), Volume II of AP-42 contained all available information about mobile source emission factors, including the source code listing of the MOBILE1 highway vehicle emission factor model. As the underlying data sets on in-use emission levels were expanded, EPA's understanding of the many parameters influencing in-use vehicle emission levels increased, and the MOBILE program steadily grew in complexity and sophistication, both to account for these parameters and to provide more user-controlled options. Thus in later updates to AP-42 Vol. II, it was no longer feasible to provide complete listings of all emission factors. The structure of the last complete update to AP-42 Volume II (4th Edition, 1989; Supplement A, 1991) included in Section I extensive background information and documentation about the highway vehicle emission factor model (at that time, MOBILE5), and included hundreds of tables presenting of both values used in the model and "look-up tables" of emission factors produced by the model for various conditions.

Section II provided emission factor information, in the form of look-up tables, for a wide range of off-road mobile sources (including agricultural equipment, construction equipment, lawn and garden equipment, aircraft and aircraft engines, locomotives, marine vessels, and miscellaneous types of equipment). Much of the

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information presented in Section II had not been updated since it was first compiled in the 1970s, and so did not reflect changes in technology that took place even in the absence of emission standards and other regulatory requirements.

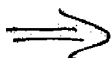
About Portable Document Format Files

Highway Vehicles

In the early 1990s, OTAQ began to develop a 5th edition of AP-42 Volume II, based on the MOBILE5 highway vehicle emission factor model. The following sections of the planned 5th edition of AP-42 Vol. II were completed and posted on the web:

- Appendix G: Sample Calculation of Motor Vehicle Emissions
- Appendix H: Highway Mobile Source Emission Factor Tables
- Appendix I: Emission Sensitivity Tables -- All Vehicles Combined
- Appendix J: Emission Sensitivity Tables -- By Vehicle Type
- Appendix K: Emission Sensitivity Tables -- Air Conditioning and Extra Loads

Appendix G: Sample Calculation of Motor Vehicle Emissions
[115K PDF](#)



Appendix H: Highway Mobile Source Emission Factor Tables

- List of Tables in Appendix H [6K TXT](#) or [7K PDF](#)
- [Individual Text Tables](#)
- Light-Duty Gasoline Vehicles [119K PDF](#)
- Light-Duty Gasoline Trucks-1 [117K PDF](#)
- Light-Duty Gasoline Trucks-2 [109K PDF](#)
- Heavy-Duty Gasoline Trucks [87K PDF](#)
- Light-Duty Diesel Vehicles [43K PDF](#)
- Light-Duty Diesel Trucks [41K PDF](#)
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Appendix I: Emission Sensitivity Tables -- All Vehicles Combined
Full Document, introduction and tables [155K PDF](#) or [Directory of Individual Tables](#)

Appendix J: Emission Sensitivity Tables -- By Vehicle Type
Full Document, introduction and tables [155K PDF](#) or [Directory of Individual Tables](#)

Appendix K: Emission Sensitivity Tables -- Air Conditioning and Extra Loads
Full Document, introduction and tables [37K PDF](#) or [Directory of Individual Tables](#)

Appendix G describes the major steps used in MOBILE5 to calculate average in-use emissions for the specific case of exhaust hydrocarbons (HC) from light-duty gas vehicles. Appendix H consists of several hundred tables that document many of the

H-258
TABLE 7.1.1
NONTAMPERED EXHAUST EMISSION RATES FOR
LOW ALTITUDE
HEAVY DUTY DIESEL POWERED VEHICLES
* BER = ZML + (DR * M)

Pol	Model Years	Zero Mile Emission Level	Deterioration Rate	50,000 Mile Emission Level	100,000 Mile Emission Level
HC	Pre-1967	3.540	0.060	3.840	4.140
	1967-1968	3.660	0.060	3.960	4.260
	1969	3.780	0.060	4.080	4.380
	1970	3.810	0.060	4.110	4.410
	1971-1973	3.910	0.060	4.210	4.510
	1974-1976	3.910	0.060	4.210	4.510
	1977	3.990	0.060	4.290	4.590
	1978	3.920	0.060	4.220	4.520
	1979	3.510	0.000	3.510	3.510
	1980-1981	3.170	0.000	3.170	3.170
	1982	2.780	0.000	2.780	2.780
	1983	2.660	0.000	2.660	2.660
	1984	2.820	0.000	2.820	2.820
	1985	2.590	0.000	2.590	2.590
	1986	2.280	0.000	2.280	2.280
	1987	2.230	0.000	2.230	2.230
	1988-1989	2.180	0.000	2.180	2.180
	1990	2.130	0.000	2.130	2.130
	1991-1997	2.100	0.000	2.100	2.100
	1998-2000	2.100	0.000	2.100	2.100
	2001+	2.100	0.000	2.100	2.100
CO	Pre-1967	10.320	0.140	11.020	11.720
	1967-1968	10.690	0.150	11.440	12.190
	1969	11.040	0.150	11.790	12.540
	1970	11.130	0.150	11.880	12.630
	1971-1973	11.420	0.160	12.220	13.020
	1974-1976	11.420	0.160	12.220	13.020
	1977	11.650	0.160	12.450	13.250
	1978	11.440	0.160	12.240	13.040
	1979	14.040	0.120	14.640	15.240
	1980-1981	12.670	0.110	13.220	13.770
	1982	11.120	0.100	11.620	12.120
	1983	10.660	0.090	11.110	11.560
	1984	11.260	0.100	11.760	12.260
	1985	10.350	0.090	10.800	11.250
	1986	10.360	0.090	10.810	11.260
	1987	10.140	0.090	10.590	11.040
	1988-1989	9.900	0.080	10.300	10.700
	1990	9.670	0.080	10.070	10.470
	1991-1997	9.540	0.080	9.940	10.340
	1998-2000	9.530	0.080	9.930	10.330
	2001+	9.520	0.080	9.920	10.320
NOx	Pre-1967	22.990	0.170	23.840	24.690
	1967-1968	23.830	0.180	24.730	25.630
	1969	24.590	0.180	25.490	26.390
	1970	24.800	0.190	25.750	26.700
	1971-1973	25.460	0.190	26.410	27.360
	1974-1976	25.440	0.190	26.390	27.340
	1977	25.970	0.190	26.920	27.870
	1978	25.500	0.190	26.450	27.400
	1979	23.780	0.000	23.780	23.780
	1980-1981	21.470	0.000	21.470	21.470
	1982	18.840	0.000	18.840	18.840
	1983	18.060	0.000	18.060	18.060
	1984	19.080	0.000	19.080	19.080
	1985	17.530	0.000	17.530	17.530
	1986	17.560	0.000	17.560	17.560
	1987	17.180	0.000	17.180	17.180
	1988-1989	16.770	0.000	16.770	16.770
	1990	9.870	0.000	9.870	9.870
	1991-1997	8.130	0.000	8.130	8.130
	1998-2000	6.490	0.000	6.490	6.490
	2001+	6.490	0.000	6.490	6.490

* WHERE : BER = Nontampered basic exhaust emission rates in grams/mile,
ZML = Zero mile level in grams/mile,
DR = Deterioration rate in grams/mile/10K miles,
M = Cumulative mileage / 10,000 miles.

DATE : JUNE 30, 1995

Given: Emission Factors for the Combustion of Natural Gas (AP-42, Chapter 1, Table 1.4-1)

Residential Furnaces (< 0.3 mm Btu/hr heat input)

$$\text{Nitrogen Oxides (NO}_x\text{)} = 94 \text{ lbs} / 10^6 \text{ scf}$$

$$\text{Carbon Monoxide (CO)} = 40 \text{ lbs} / 10^6 \text{ scf}$$

scf = standard cubic feet of natural gas

Assumptions:

$$\text{Annual Fuel Use} = 3.3 \times 10^9 \text{ Btu/year}$$

$$\text{Heat Content of Natural Gas} = 1020 \text{ Btu/scf}$$

Example calculation

$$\left[\frac{94 \text{ lbs NO}_x}{10^6 \text{ scf}} \right] \left[\frac{3,300 \times 10^6 \text{ Btu}}{\text{year}} \right] \left[\frac{\text{scf}}{1020 \text{ Btu}} \right] \left[\frac{\text{ton}}{2000 \text{ lbs}} \right]$$

$$= \underline{0.152 \text{ tons/year NO}_x}$$

$$\frac{40 \text{ lbs CO}}{10^6 \text{ scf}} \Rightarrow \underline{0.065 \text{ tons/year CO}}$$



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Emissions Factors & AP 42

An **emissions factor** is a representative value that attempts to relate the quantity of a pollutant released to the atmosphere with an activity associated with the release of that pollutant. These factors are usually expressed as the weight of pollutant divided by a unit weight, volume, distance, or duration of the activity emitting the pollutant (e.g., kilograms of particulate emitted per megagram of coal burned). Such factors facilitate estimation of emissions from various sources of air pollution. In most cases, these factors are simply averages of all available data of acceptable quality, and are generally assumed to be representative of long-term averages for all facilities in the source category (i.e., a population average).

The general equation for emissions estimation is:

$$E = A \times EF \times (1 - ER/100)$$

where:

- E = emissions;
- A = activity rate;
- EF = emission factor, and
- ER = overall emission reduction efficiency, %

For information about emissions factors from highway vehicles and nonroad mobile sources, visit the [Office of Transportation and Air Quality](#) web site.

AP 42, Fifth Edition

Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources

For current information on AP 42 updates and the activities of the Emissions Factors and Policy Applications Group, you can subscribe to the [CHIEF Listserv](#).

AP 42 FAQs Answers to frequently asked questions about AP 42

Drafts Draft Sections Under Review


Supplements AP 42 historical listing of supplements

**Older Editions of
AP-42, Volume 1** This information is available for historical purposes only. For the most recent emissions factors, supported by the EPA, please see the table of contents below.

Procedures *Procedures for Preparing Emission Factor Documents* -- Describes procedures for developing and reporting emission factors in EPA publications -- November 1997 (PDF 477K)

Contents Detailed Table of Contents, Publications in Series, Insertion Instructions, and Key Word Index -- May 1998 (PDF 128K). This is current through Fifth Edition,

AP 42, Volume I, Fifth Edition

Introduction	Introduction to AP 42, Volume I, Fifth Edition -- January 1995 (PDF 40K)
 Chapter 1	<u>External Combustion Sources</u>
Chapter 2	<u>Solid Waste Disposal</u>
Chapter 3	<u>Stationary Internal Combustion Sources</u>
Chapter 4	<u>Evaporation Loss Sources</u>
Chapter 5	<u>Petroleum Industry</u>
Chapter 6	<u>Organic Chemical Process Industry</u>
Chapter 7	<u>Liquid Storage Tanks</u>
Chapter 8	<u>Inorganic Chemical Industry</u>
Chapter 9	<u>Food and Agricultural Industries</u>
Chapter 10	<u>Wood Products Industry</u>
Chapter 11	<u>Mineral Products Industry</u>
Chapter 12	<u>Metallurgical Industry</u>
Chapter 13	<u>Miscellaneous Sources</u>
Chapter 14	<u>Greenhouse Gas Biogenic Sources</u>
Chapter 15	<u>Ordnance Detonation - New chapter June 2004</u>
Appendix A	<u>Miscellaneous Data & Conversion Factors -- September 1985 (PDF 103K)</u>
Appendix B.1 Pages 1-49	<u>Part 1 - Particle Size Distribution Data and Sized Emission Factors for Selected Sources -- October 1986 (PDF 1M)</u>
Appendix B.1 Pages 50-103	<u>Part 2 - Particle Size Distribution Data and Sized Emission Factors for Selected Sources -- October 1986 (PDF 1M)</u>
Appendix B.2	<u>Generalized Particle Size Distributions -- September 1996 (PDF 137K)</u>
Appendix C.1	<u>Procedures for Sampling Surface/Bulk Dust Loading -- July 1993 (PDF 65K)</u>
Appendix C.2	<u>Procedures for Laboratory Analysis of Surface/Bulk Dust Loading Samples -- July 1993 (PDF 42K)</u>

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1.0 [Introduction to External Combustion Sources](#)

1.1 [Bituminous and Subbituminous Coal Combustion](#)

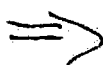
- [Final Section](#) - Supplement E, September 1998 (PDF 515K)
- [Background Document](#) (PDF 8M)
- [Related EIIP Documents](#) (PDF 232K)

1.2 [Anthracite Coal Combustion](#)

- [Final Section](#) - Supplement B, October 1996 (PDF 59K)
- [Background Document](#) (PDF 249K)
- [Related EIIP Documents](#) (PDF 232K)

1.3 [Fuel Oil Combustion](#)

- [Final Section](#) - Supplement E, September 1998 (PDF 293K)
- [Errata](#)
- [Background Document](#) - September 1998 (PDF 900K)
- [Related Information](#)
- [Related EIIP Documents](#) (PDF 232K)



1.4 [Natural Gas Combustion](#)

- [Final Section](#) - Supplement D, July 1998 (PDF 230K)
- [Background Document](#) (PDF 225K)
- [Related Information](#)
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1.5 [Liquified Petroleum Gas Combustion](#)

- [Final Section](#) - Supplement B, October 1996 (PDF 18K)
- [Background Document](#) (PDF 129K)
- [Related EIIP Documents](#) (PDF 232K)

1.6 [Wood Residue Combustion in Boilers](#)

- [Final Section](#) - Update 2003, September 2003 (PDF 480K)
- [Background Document](#) (PDF 72K)
- [Related Information](#)
- [Related EIIP Documents](#) (PDF 232K)

1.7 [Lignite Combustion](#)

- [Final Section](#) - Supplement E, September 1998 (PDF 129K)
- [Background Document](#) (PDF 452K)
- [Related EIIP Documents](#) (PDF 232K)

1.8 [Bagasse Combustion in Sugar Mills](#)

- [Final Section](#) - Supplement B, October 1996 (PDF 26K)
- [Background Document](#) (PDF 221K)

Table 1.4-1. EMISSION FACTORS FOR NITROGEN OXIDES (NO_x) AND CARBON MONOXIDE (CO)
FROM NATURAL GAS COMBUSTION^a

Combustor Type (MMBtu/hr Heat Input) [SCC]	NO _x ^b		CO	
	Emission Factor (lb/10 ⁶ scf)	Emission Factor Rating	Emission Factor (lb/10 ⁶ scf)	Emission Factor Rating
Large Wall-Fired Boilers (≥100) [1-01-006-01, 1-02-006-01, 1-03-006-01]				
Uncontrolled (Pre-NSPS) ^c	280	A	84	B
Uncontrolled (Post-NSPS) ^c	190	A	84	B
Controlled - Low NO _x burners	140	A	84	B
Controlled - Flue gas recirculation	100	D	84	B
Small Boilers (<100) [1-01-006-02, 1-02-006-02, 1-03-006-02, 1-03-006-03]				
Uncontrolled	100	B	84	B
Controlled - Low NO _x burners	50	D	84	B
Controlled - Low NO _x burners/Flue gas recirculation	32	C	84	B
Tangential-Fired Boilers (All Sizes) [1-01-006-04]				
Uncontrolled	170	A	24	C
Controlled - Flue gas recirculation	76	D	98	D
Residential Furnaces (<0.3) [No SCC]				
Uncontrolled	94	B	40	B

^a Reference 11. Units are in pounds of pollutant per million standard cubic feet of natural gas fired. To convert from lb/10⁶ scf to kg/10⁶ m³, multiply by 16. Emission factors are based on an average natural gas higher heating value of 1,020 Btu/scf. To convert from lb/10⁶ scf to lb/MMBtu, divide by 1,020. The emission factors in this table may be converted to other natural gas heating values by multiplying the given emission factor by the ratio of the specified heating value to this average heating value. SCC = Source Classification Code. ND = no data. NA = not applicable.

^b Expressed as NO_x. For large and small wall fired boilers with SNCR control, apply a 24 percent reduction to the appropriate NO_x emission factor. For tangential-fired boilers with SNCR control, apply a 13 percent reduction to the appropriate NO_x emission factor.

^c NSPS=New Source Performance Standard as defined in 40 CFR 60 Subparts D and Db. Post-NSPS units are boilers with greater than 250 MMBtu/hr of heat input that commenced construction modification, or reconstruction after August 17, 1971, and units with heat input capacities between 100 and 250 MMBtu/hr that commenced construction modification, or reconstruction after June 19, 1984.

Given: Emission Factors for Aggregate Handling and Storage Piles (AP-42, chpt 13)

$$E = K (0.0032) \left(\frac{U}{5} \right)^{1.3} / \left(\frac{M}{2} \right)^{1.4}$$

where: E = emission factor (lbs PM_{10} / ton DS)

K = particle size multiplier.

U = mean wind speed (mph)

M = material moisture content (%)

Assumptions

Total Acres = 30

Total Solids Applied = 6,310 tons/day

$K = 0.35$ PM less than 10 microns

$U = 12$ miles per hour

$M = 10$ percent moisture

$$E = (0.35) (0.0032) \left[\frac{12}{5} \right]^{1.3} / \left[\frac{10}{2} \right]^{1.4}$$

$$E = 0.000367 \text{ lbs } PM_{10} / \text{Ton DS}$$

$$Q = \left[\frac{6,310 \text{ tons}}{\text{day}} \right] \left[\frac{6 \text{ day}}{\text{wk}} \right] \left[\frac{52 \text{ wks}}{\text{yr}} \right] = \frac{1.97 \times 10^6}{\text{ton DS year}}$$

$$\begin{aligned} E \times Q &= \left[\frac{0.000367 \text{ lbs } PM_{10}}{\text{Ton DS}} \right] \left[\frac{1.97 \times 10^6 \text{ ton DS}}{\text{year}} \right] \left[\frac{\text{ton } PM_{10}}{2000 \text{ lbs}} \right] \\ &= \underline{\underline{0.36 \text{ tons } PM_{10} \text{ year}}} \end{aligned}$$



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13.0 Introduction to Miscellaneous Sources

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- [Related Information](#)

13.2 Introduction to Fugitive Dust Sources

- [Final Section](#) - January 1995 (PDF 9K)

13.2.1 Paved Roads

- [Final Section](#) - December 2003 (PDF 150K)
- [Background Documentation](#)
- [Related Information](#) - supporting data.

13.2.2 Unpaved Roads

- [Final Section](#) - December 2003 (PDF 232K)
- [Background Documentation](#)
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13.2.3 Heavy Construction Operations

- [Final Section](#) - January 1995 (PDF 31K)
- [Errata](#)

13.2.4 Aggregate Handling and Storage Piles

- [Final Section](#) - January 1995 (PDF 27K)

13.2.5 Industrial Wind Erosion

- [Final Section](#) - January 1995 (PDF 170K)
- NOTE: Cone surface area equation in section 13.2.5.4 corrected on 4/13/2001.

13.2.6 Abrasive Blasting

- [Final Section](#) - Supplement D, October 1997 (PDF 69K)
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13.3 Explosives Detonation

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13.4 Wet Cooling Towers

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13.2.4 Aggregate Handling And Storage Piles

13.2.4.1 General

Inherent in operations that use minerals in aggregate form is the maintenance of outdoor storage piles. Storage piles are usually left uncovered, partially because of the need for frequent material transfer into or out of storage.

Dust emissions occur at several points in the storage cycle, such as material loading onto the pile, disturbances by strong wind currents, and loadout from the pile. The movement of trucks and loading equipment in the storage pile area is also a substantial source of dust.

13.2.4.2 Emissions And Correction Parameters

The quantity of dust emissions from aggregate storage operations varies with the volume of aggregate passing through the storage cycle. Emissions also depend on 3 parameters of the condition of a particular storage pile: age of the pile, moisture content, and proportion of aggregate fines.

When freshly processed aggregate is loaded onto a storage pile, the potential for dust emissions is at a maximum. Fines are easily disaggregated and released to the atmosphere upon exposure to air currents, either from aggregate transfer itself or from high winds. As the aggregate pile weathers, however, potential for dust emissions is greatly reduced. Moisture causes aggregation and cementation of fines to the surfaces of larger particles. Any significant rainfall soaks the interior of the pile, and then the drying process is very slow.

Silt (particles equal to or less than 75 micrometers [μm] in diameter) content is determined by measuring the portion of dry aggregate material that passes through a 200-mesh screen, using ASTM-C-136 method.¹ Table 13.2.4-1 summarizes measured silt and moisture values for industrial aggregate materials.

13.2.4.3 Predictive Emission Factor Equations

Total dust emissions from aggregate storage piles result from several distinct source activities within the storage cycle:

1. Loading of aggregate onto storage piles (batch or continuous drop operations).
2. Equipment traffic in storage area.
3. Wind erosion of pile surfaces and ground areas around piles.
4. Loadout of aggregate for shipment or for return to the process stream (batch or continuous drop operations).

Either adding aggregate material to a storage pile or removing it usually involves dropping the material onto a receiving surface. Truck dumping on the pile or loading out from the pile to a truck with a front-end loader are examples of batch drop operations. Adding material to the pile by a conveyor stacker is an example of a continuous drop operation.

Table 13.2.4-1. TYPICAL SILT AND MOISTURE CONTENTS OF MATERIALS AT VARIOUS INDUSTRIES^a

Industry	No. Of Facilities	Material	Silt Content (%)			Moisture Content (%)		
			No. Of Samples	Range	Mean	No. Of Samples	Range	Mean
Iron and steel production	9	Pellet ore	13	1.3 - 13	4.3	11	0.64 - 4.0	2.2
		Lump ore	9	2.8 - 19	9.5	6	1.6 - 8.0	5.4
		Coal	12	2.0 - 7.7	4.6	11	2.8 - 11	4.8
		Slag	3	3.0 - 7.3	5.3	3	0.25 - 2.0	0.92
		Flue dust	3	2.7 - 23	13	1	—	7
		Coke breeze	2	4.4 - 5.4	4.9	2	6.4 - 9.2	7.8
		Blended ore	1	—	15	1	—	6.6
		Sinter	1	—	0.7	0	—	—
		Limestone	3	0.4 - 2.3	1.0	2	ND	0.2
Stone quarrying and processing	2	Crushed limestone	2	1.3 - 1.9	1.6	2	0.3 - 1.1	0.7
		Various limestone products	8	0.8 - 14	3.9	8	0.46 - 5.0	2.1
Taconite mining and processing	1	Pellets	9	2.2 - 5.4	3.4	7	0.05 - 2.0	0.9
		Tailings	2	ND	11	1	—	0.4
Western surface coal mining	4	Coal	15	3.4 - 16	6.2	7	2.8 - 20	6.9
		Overburden	15	3.8 - 15	7.5	0	—	—
		Exposed ground	3	5.1 - 21	15	3	0.8 - 6.4	3.4
Coal-fired power plant Municipal solid waste landfills	1 4	Coal (as received)	60	0.6 - 4.8	2.2	59	2.7 - 7.4	4.5
		Sand	1	—	2.6	1	—	7.4
		Slag	2	3.0 - 4.7	3.8	2	2.3 - 4.9	3.6
		Cover	5	5.0 - 16	9.0	5	8.9 - 16	12
		Clay/dirt mix	1	—	9.2	1	—	14
		Clay	2	4.5 - 7.4	6.0	2	8.9 - 11	10
		Fly ash	4	78 - 81	80	4	26 - 29	27
		Misc. fill materials	1	—	12	1	—	11

^a References 1-10. ND = no data.

The quantity of particulate emissions generated by either type of drop operation, per kilogram (kg) (ton) of material transferred, may be estimated, with a rating of A, using the following empirical expression:¹¹

$$E = k(0.0016) \frac{\left(\frac{U}{2.2}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}} \text{ (kg/megagram [Mg])} \quad (1)$$

$$E = k(0.0032) \frac{\left(\frac{U}{5}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}} \text{ (pound [lb]/ton)}$$

where:

E = emission factor

k = particle size multiplier (dimensionless)

U = mean wind speed, meters per second (m/s) (miles per hour [mph])

M = material moisture content (%)

The particle size multiplier in the equation, k, varies with aerodynamic particle size range, as follows:

Aerodynamic Particle Size Multiplier (k) For Equation 1				
< 30 μm	< 15 μm	< 10 μm	< 5 μm	< 2.5 μm
0.74	0.48	0.35	0.20	0.11



The equation retains the assigned quality rating if applied within the ranges of source conditions that were tested in developing the equation, as follows. Note that silt content is included, even though silt content does not appear as a correction parameter in the equation. While it is reasonable to expect that silt content and emission factors are interrelated, no significant correlation between the 2 was found during the derivation of the equation, probably because most tests with high silt contents were conducted under lower winds, and vice versa. It is recommended that estimates from the equation be reduced 1 quality rating level if the silt content used in a particular application falls outside the range given:

Ranges Of Source Conditions For Equation 1			
Silt Content (%)	Moisture Content (%)	Wind Speed	
		m/s	mph
0.44 - 19	0.25 - 4.8	0.6 - 6.7	1.3 - 15



To retain the quality rating of the equation when it is applied to a specific facility, reliable correction parameters must be determined for specific sources of interest. The field and laboratory procedures for aggregate sampling are given in Reference 3. In the event that site-specific values for correction parameters cannot be obtained, the appropriate mean from Table 13.2.4-1 may be used, but the quality rating of the equation is reduced by 1 letter.

For emissions from equipment traffic (trucks, front-end loaders, dozers, etc.) traveling between or on piles, it is recommended that the equations for vehicle traffic on unpaved surfaces be used (see Section 13.2.2). For vehicle travel between storage piles, the silt value(s) for the areas among the piles (which may differ from the silt values for the stored materials) should be used.

Worst-case emissions from storage pile areas occur under dry, windy conditions. Worst-case emissions from materials-handling operations may be calculated by substituting into the equation appropriate values for aggregate material moisture content and for anticipated wind speeds during the worst case averaging period, usually 24 hours. The treatment of dry conditions for Section 13.2.2, vehicle traffic, "Unpaved Roads", follows the methodology described in that section centering on parameter p. A separate set of nonclimatic correction parameters and source extent values corresponding to higher than normal storage pile activity also may be justified for the worst-case averaging period.

13.2.4.4 Controls¹²⁻¹³

Watering and the use of chemical wetting agents are the principal means for control of aggregate storage pile emissions. Enclosure or covering of inactive piles to reduce wind erosion can also reduce emissions. Watering is useful mainly to reduce emissions from vehicle traffic in the storage pile area. Watering of the storage piles themselves typically has only a very temporary slight effect on total emissions. A much more effective technique is to apply chemical agents (such as surfactants) that permit more extensive wetting. Continuous chemical treating of material loaded onto piles, coupled with watering or treatment of roadways, can reduce total particulate emissions from aggregate storage operations by up to 90 percent.¹²

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EPA's General Conformity Regulations: Current Actions

Control # 05-A-505

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ABSTRACT

In 1993, the U.S. Environmental Protection Agency promulgated its General Conformity Regulations to ensure that Federal actions will not interfere with the State's ability to attain and maintain the national ambient air quality standards including the provision of the State implementation plans. In 2005, EPA is planning to propose its first major revision to those regulations. This paper provides an overview of the existing regulations and highlights the possible revisions to the regulations. In addition, the paper will review other events that affect the implementation of the General Conformity Regulations such as promulgation of rules governing the attainment of the 8-hour ozone and PM_{2.5} standards, and new programs for early emission reductions at airports.

INTRODUCTION

Air quality management in the United States is based upon a partnership between the federal government and state and local air quality agencies. The U. S. Environmental Protection Agency (EPA) develops and promulgates national ambient air quality standards (NAAQSs) for the protection of public health and welfare. States and local air quality agencies in turn develop programs to attain and maintain the NAAQSs. Those programs are adopted and submitted to EPA as the State Implementation Plan (SIP) for the area. In 1977 the US Congress recognized the potential for emissions from federal actions interfering with the SIP and added section 176(c) to the Clean Air Act.¹ That section prohibits federal agencies from taking any action which does not conform with the SIP or interferes with the state's ability to attain and maintain the NAAQSs. In the 1990 Amendments to the Clean Air Act, Congress clarified and strengthened section 176(c). In response to the Congressional mandate, EPA has promulgated two sets of regulations to implement the provisions of section 176(c): (1) The Transportation Conformity Regulations promulgated on November 24, 1993² address actions related to Federal Highway Administration programs or Federal Transit Administration programs and (2) the General Conformity Regulations promulgated on November 30, 1993³ address all other federal actions.

EXISTING REGULATIONS

Federal agencies and third parties in implementing the existing General Conformity Regulations have found that their activities fall in to three phases: (1) Applicability analysis, (2) Conformity determination, and (3) Review process. Besides ensuring that the federal actions are in conformance with the SIP, the regulations encourage consultation between the federal agency and the state or local air pollution control agencies before and during the environmental review process.

Applicability Analysis

In 1995, Congress revised section 176(c) of the Clean Air Act to limit its applicability to nonattainment and maintenance areas only.⁴ Therefore, only actions which cause emissions in designated nonattainment and maintenance areas are subject to the regulation. In addition, the regulations recognize that the vast majority of federal actions do not result in a significant increase in emissions and established a number of exemptions including de minimis emission levels based on the type and severity of the nonattainment problem. In the applicability analysis phase the federal agency determines if the emissions will occur in a nonattainment or maintenance area, if the action is exempt, and if the total direct and indirect emissions are above the de minimis levels.⁵ During the applicability analysis phase, the federal agency also determines if the action is considered “regionally significant,” i.e., equal to or greater than ten percent of the area’s emission inventory for the pollutant. If the action is regionally significant, the de minimis emission levels and other exemptions do not apply and a full determination is required.

Conformity Determination

When the applicability analysis shows that the actions must undergo a conformity determination, the federal agency can use several methods to demonstrate conformity with the applicable SIP. These methods include:

- Demonstrating that the emissions are specifically identified and accounted for in the applicable SIP,
- Obtaining written statement from the state agency responsible for the SIP documenting that the total emissions from the action along with all other emissions in the area will not exceed the SIP emission budget,
- Obtaining a written commitment from the state to revise the SIP to include the emissions from the action,
- Obtaining statement from the metropolitan planning organization for the area documenting that the emissions are included in the transportation plan or transportation improvement plan,

- Reducing emissions of the same pollutant in the same nonattainment or maintenance area to fully offset the total direct and indirect emissions, or
- Conducting air quality modeling that demonstrates that the emissions will not cause or contribute to new violations of the standards or increase the frequency or severity of any existing violations of the standards. (Air quality modeling can not be used to demonstrate conformity for emissions of ozone precursors or nitrogen dioxide (NO₂).)

Review Process

As public bodies, federal agencies must make their conformity determinations through a public process. The General Conformity Regulations require that federal agencies provide notice of the draft determination to the EPA regional office, state and local air quality agencies, local metropolitan planning organization and, where applicable, federal land manager. In addition, the regulations require that federal agencies provide at least a 30-day comment period on the draft determination and make their final determination public. State agencies and the public can appeal the final agencies determination in the Courts. Therefore, failure by the agencies to follow the technical and procedural requirements can result in adverse court decisions.

CURRENT ACTIVITIES

In 2004, several actions have occurred that directly and indirectly affect the implementation of the General Conformity Regulations. These actions include designation of 8-hour ozone nonattainment areas, promulgation of phase 1 of the 8-hour implementation rules, designation of the PM_{2.5} nonattainment areas, publication of Airport Emission Reduction Credit Guidance to implement Federal Aviation Administration Voluntary Airport Low Emission (VALE) Program, and the Supreme Court decision overturning the lower court ruling on the Mexican motor carrier case.

Guidance on the Implementation of New Standards

On April 30, 2004 EPA published the area designations and classifications for the 8-hour ozone NAAQS⁶ and promulgated the first phase of the implementation regulations for the 8-hour standard. Part D of Title I of the Clean Air Act prescribes the requirements for areas designated as nonattainment for the criteria pollutants. Part D is divided into several subparts. Subpart 1 provides the basic requirements for all nonattainment areas. Subpart 2 provides additional requirements for certain ozone nonattainment areas and subpart 4 provides additional requirements for certain PM₁₀ nonattainment areas. In designating the 8-hour ozone nonattainment areas EPA allowed some areas with air quality close to the standard to meet only the requirements of subpart one and called these areas “basic areas.” Areas with higher concentrations were classified based on a system that resembled the classification system for the 1-hour ozone standard.

Although EPA revised level and averaging time for the ozone standard, it did not make any specific changes to the General Conformity Regulations to address the new 8-hour ozone standard since the existing regulations cover the emission of ozone precursors and revisions to the de minimis emission levels were not appropriate. The de minimis emission levels are based upon the size of a major stationary source in the nonattainment and maintenance areas.

Under section 176(c)(6) of the Clean Air Act,⁷ federal agencies have a one year grace period after an area is newly designated as nonattainment for a pollutant before the conformity regulations apply. Since the designations for most of the 8-hour nonattainment areas were effective on June 15, 2004, the effective date for the 8-hour ozone standards conformity requirements is June 15, 2005. As part of the implementation rule, EPA stated that the 1-hour standard would be revoked 1 year after the effective date for the 8-hour designation. Therefore, conformity requirements will be based on the 1-hour standard designations/classifications until June 15, 2005 and on the 8-hour standard designations/classifications after that date. By revoking the 1-hour ozone standard on the effective date of the conformity requirements for the areas, federal agencies conformity requirements will be based on one standard designations/classifications or the other, but not both.

Since general conformity determinations are “one time” decisions, a conformity determination under the 1-hour ozone standard requirements made before June 15, 2005 would generally be considered “grandfathered” and conformity based on the 8-hour standard would not be required. If the federal agency completes its conformity determination (or in the absence of a conformity determination the National Environmental Policy Act analysis) before June 15, 2005, but the emissions from the action will not occur until after that date, then the federal agency has the option of conforming to either the 1-hour ozone standard or the 8-hour ozone standard requirements. In cases where the conformity was not applicable based on the 1-hour ozone standard designation, a record of decision for the Environmental Impact Statement or a finding of no significant impact for and Environmental Assessment signed before June 15, 2005, can be used as evidence that the action’s environmental review was completed.

An exception to the June 15, 2004 effective date for the nonattainment designations is the “early action compact” (EAC) areas. These are areas that were attaining the 1-hour ozone standard but were potentially nonattainment for the 8-hour ozone standard and agreed to take early actions to meet the standard. In the April 30, 2004, notice, EPA identified 13 EAC areas as nonattainment for the 8-hour ozone standard, but deferred the effective date for the designation. The effective date of the ultimate designation as either attainment or nonattainment will start the one year clock for the grace period and the revocation of the 1-hour ozone standard.

On January 5, 2005, EPA published the designations for the new PM_{2.5} NAAQS and established a 90-day effective date. Therefore, the designations are effective on April 5, 2005 and the 1-year grace period for the PM_{2.5} nonattainment areas will be between April 5, 2005 and April 5, 2006. EPA is expected to propose the implementation requirements for attaining the standard in the PM_{2.5} nonattainment areas in the Spring of 2005. Since the PM_{2.5} standard covers only part of the pollutants covered by the PM₁₀ standards, EPA is not expected to revoke the PM₁₀ standard. Therefore, until April 5, 2006, conformity will be based on the PM₁₀ designations/classifications.

After that date, it is expected that the conformity will be based on both the PM_{2.5} and PM₁₀ designations/classifications.

In designating areas as PM_{2.5} nonattainment, EPA considered the areas as “basic” and did not classify the areas. Therefore, the de minimis emission level for all PM_{2.5} nonattainment areas will be 100 tons per year.

FAA Voluntary Low Emission Program

As part of the FAA reauthorization⁸ act passed in December 2003, Congress provided for the use of airport improvement program (AIP) funds and passenger facility charge (PFC) funds to support the voluntary emission reductions at airports. In order to receive support from either the AIP or the PFC funds, the airport must receive emission reduction credits for the reductions and the credits can only be used for General Conformity determinations and new source review permits at the airport. To support this program, Congress required EPA, in consultation with FAA, to develop guidance for a nationally consistent method crediting the reductions. On September 30, 2004, EPA published the “Guidance on Airport Emission Reduction Credits for Early Measures through Voluntary Airport Low Emission Programs.”⁹ That guidance describes the methods for generating and using Airport Emission Reduction Credits (ARECs).

Conformity for Safety Rule Governing Mexican Motor Carriers

On June 7, 2004, the U.S. Supreme Court overturned an earlier ruling by the U.S. Court of Appeals for the 9th Circuit on a conformity issue.¹⁰ As part of the North American Free Trade Agreement (NAFTA) treaty, the U.S. was to permit Mexican truck deliveries throughout the U.S. To permit the Mexican trucks access to all of the U.S., Federal Motor Carrier Safety Administration (FMCSA) issued three sets of rules (the application rule, the safety rule, and the certification rule) to govern Mexican trucks travel beyond a 20 mile zone along the border. A combination of trucking organizations, labor unions, and environmental groups appealed the regulations in the 9th U.S. Circuit Court of Appeals claiming that FMCSA failed to develop an adequate Environmental Impact Statement (EIS) and failed to make a general conformity determination. On January 16, 2003, a three judge panel agreed with the plaintiffs and remanded the regulations to FMCSA.

Although most of the 9th Circuit Court’s opinion dealt with the EIS issue, it made a significant ruling concerning the General Conformity Regulations. By considering the emissions from the Mexican trucks as included in the “total direct and indirect emissions” from the promulgation of the FMCSA rules, the Court would have broadened the definition of indirect emissions. Under the interpretation of total direct and indirect emissions used by the 9th Circuit Court, an agency taking an ancillary, but facilitating action would have to include the emissions in its conformity evaluation. The US Supreme Court reversed the 9th Circuit Court’s decision.

REVISION TO THE REGULATIONS

The EPA has not revised the General Conformity Regulations since they were first promulgated in 1993. Since that time, EPA and other federal agencies have gained experience with the implementation of the existing rules. The EPA and other federal agencies have identified several issues with the implementation of the regulations. Therefore, EPA has initiated a program to review, revise, and streamline the regulations. The potential revisions to the regulations can be divided into five categories: 1) innovative and flexible approaches, 2) streamlining and burden reduction, 3) transition tools for new standards, 4) special requests by other agencies and 5) clarification of existing rules. The revisions are expected to be proposed in the summer of 2005. The following sections provide information on some of the issues being reviewed.

Innovative and flexible approaches

Some of the innovative approaches being considered as possible revisions to the General Conformity Regulations include developing an alternative emission budget approach program, codifying the AERC guidance, and allowing alternate schedules for mitigating the emissions increases. Under the emission budget approach, federal facilities could negotiate an emission budget with the state agency and, as long as the facility stayed within the budget, it would be presumed to conform and a conformity determination would not be necessary. By codifying the AERC guidance developed for the VALE program, other federal agencies could use the guidance to develop similar programs. Under certain conditions states may be able to accommodate short term increases in emissions if there is a substantial long term reduction in emissions. The mitigation time approach could allow some flexibility for federal agencies and states to negotiate a program for non-contemporaneous emissions mitigation measures.

Streamlining and burden reduction

Two of the potential revisions being considered to streamline the regulation or to reduce the burden of complying with the regulation include reviewing the need for the “regionally significant” test, and addressing emissions covered by minor source new source review (NSR) permits. For the regionally significant test, Federal agencies routinely compare the emission increases, from their actions or project, to area’s emission inventory to determine if the emissions from the action or project equals or exceeds 10 percent of the area’s emission inventory for the pollutant. Thus far no action or project, which would have otherwise been exempt, has ever been determined to be regionally significant. In the 1993 regulations, EPA exempted emissions covered by major source NSR permits because the permitting authority cannot be issued the NSR permit if the emissions do not conform to the state implementation plan. However, at the time the General Conformity Regulations were promulgated, EPA did not have a program for minor source NSR permitting and did not exempt those emissions.

Transition Tools for New Standards

Some of the potential revisions that will aid the transition to new standards and revisions to regulations include redefining the grandfathering provisions, establishing the procedures for the application for the grace period for newly designated areas, and providing flexibility in the requirement to submit SIP revisions. The existing regulations grandfathered actions when the environmental reviews for the actions were substantially completed before the General Conformity Regulations were promulgated in 1993. Since there is a 5-year time limit on the conformity determination, the grandfathering provisions may be outdated and EPA is considering whether to update the requirements. The grace period was added to the Clean Air Act after the existing regulations were promulgated and the procedures for its application should be codified. EPA is also considering providing some flexibility for states to include the future emissions into their SIPs.

Special Requests by Other Agencies

Several other federal agencies have requested some revisions and clarifications be included in the regulations. These include presuming that prescription fires that are in accordance with approved smoke management plans be considered to conform, the inclusion of construction emissions in the total direct and indirect emissions, making the offset requirements consistent with the NSR offset requirements, and clarifying the protection of classified materials. The existing regulations require construction emissions to be included in the conformity determination. While some other EPA program such as the Transportation Conformity Regulations and NSR do not, in certain cases, require construction emission be considered. EPA is reviewing its requirement for the inclusion of the construction emissions.

Clarification of Existing Rules

Some of the clarifications of the existing rules being considered include how to address actions that affect more than one nonattainment or maintenance area, and what process should be used to extend the exemption for an agency responding to an emergency episode. The existing rule appears to assume that the federal action will affect only one nonattainment or maintenance area. Some federal actions can increase emissions in more than one area and EPA is considering how to address those actions. The existing regulations provide a six month exemption for actions taken in response to an emergency episode. The regulations also allow the federal agency to extend the exemption for six-month periods, but the regulations do not specify procedures to follow in approving the extensions.

CONCLUSION

The EPA continues to work with other federal agencies to provide guidance on the implementation of the existing General Conformity Regulations and has started a process to review and revise the regulations as necessary.

REFERENCES

1. 42 U.S.C. 7506
2. 58 Federal Register 62188
3. 58 Federal Register 63214
4. National Highway System Designation Act of 1995, Public Law 104-59, 104th Congress, 1st Session, 109 Stat.568.
5. 40 CFR 93.153(b)
6. 69 Federal Register 23858
7. 42 U.S.C. 7476(c)(6).
8. Vision 100 – Century of Aviation Reauthorization Act (HR-2115)
9. Guidance on Airport Emission Reduction Credits for Early Measures through Voluntary Airport Low Emission Programs, US Environmental Protection Agency, Office of Air and Radiation, September 2004.
10. Department of Transportation v. Public Citizen, et al, 03-358 U.S. Supreme Court June 7, 2004.

Key Words

National Ambient Air Quality Standards
State Implementation Plans
Federal Agencies
Conformity
Airports

the action itself but are still reasonably foreseeable; and

(2) The Federal agency can practicably control and will maintain control over due to a continuing program responsibility of the Federal agency.

Local air quality modeling analysis means an assessment of localized impacts on a scale smaller than the entire nonattainment or maintenance area, including, for example, congested roadway intersections and highways or transit terminals, which uses an air quality dispersion model to determine the effects of emissions on air quality.

Maintenance area means an area with a maintenance plan approved under section 175A of the Act.

Maintenance plan means a revision to the applicable SIP, meeting the requirements of section 175A of the Act.

Metropolitan Planning Organization (MPO) is that organization designated as being responsible, together with the State, for conducting the continuing, cooperative, and comprehensive planning process under 23 U.S.C. 134 and 49 U.S.C. 1607.

Milestone has the meaning given in sections 182(g)(1) and 189(c)(1) of the Act.

National ambient air quality standards (NAAQS) are those standards established pursuant to section 109 of the Act and include standards for carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂), ozone, particulate matter (PM-10), and sulfur dioxide (SO₂).

NEPA is the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 *et seq.*).

Nonattainment area means an area designated as nonattainment under section 107 of the Act and described in 40 CFR part 81.

Precursors of a criteria pollutant are:

(1) For ozone, nitrogen oxides (NO_x), unless an area is exempted from NO_x requirements under section 182(f) of the Act, and volatile organic compounds (VOC); and

(2) For PM-10, those pollutants described in the PM-10 nonattainment area applicable SIP as significant contributors to the PM-10 levels.

Reasonably foreseeable emissions are projected future indirect emissions that are identified at the time the conformity determination is made; the lo-

cation of such emissions is known and the emissions are quantifiable, as described and documented by the Federal agency based on its own information and after reviewing any information presented to the Federal agency.

Regional water and/or wastewater projects include construction, operation, and maintenance of water or wastewater conveyances, water or wastewater treatment facilities, and water storage reservoirs which affect a large portion of a nonattainment or maintenance area.

Regionally significant action means a Federal action for which the direct and indirect emissions of any pollutant represent 10 percent or more of a nonattainment or maintenance area's emission inventory for that pollutant.

Total of direct and indirect emissions means the sum of direct and indirect emissions increases and decreases caused by the Federal action; i.e., the "net" emissions considering all direct and indirect emissions. The portion of emissions which are exempt or presumed to conform under § 93.153 (c), (d), (e), or (f) are not included in the "total of direct and indirect emissions." The "total of direct and indirect emissions" includes emissions of criteria pollutants and emissions of precursors of criteria pollutants.

§ 93.153 Applicability.

(a) Conformity determinations for Federal actions related to transportation plans, programs, and projects developed, funded, or approved under title 23 U.S.C. or the Federal Transit Act (49 U.S.C. 1601 *et seq.*) must meet the procedures and criteria of 40 CFR part 51, subpart T, in lieu of the procedures set forth in this subpart.

(b) For Federal actions not covered by paragraph (a) of this section, a conformity determination is required for each pollutant where the total of direct and indirect emissions in a nonattainment or maintenance area caused by a Federal action would equal or exceed any of the rates in paragraphs (b)(1) or (2) of this section.

(1) For purposes of paragraph (b) of this section, the following rates apply in nonattainment areas (NAA's):

	Tons/ year
Ozone (VOC's or NO _x):	
Serious NAA's	50
Severe NAA's	25
Extreme NAA's	10
Other ozone NAA's outside an ozone transport region	100
Marginal and moderate NAA's inside an ozone transport region:	
VOC	50
NO _x	100
Carbon monoxide:	
All NAA's	100
SO ₂ or NO ₂	100
PM-10:	
Moderate NAA's	100
Serious NAA's	70
Pb:	
All NAA's	25

(2) For purposes of paragraph (b) of this section, the following rates apply in maintenance areas:

	Tons/ year
Ozone (NO _x), SO ₂ or NO ₂ :	
All Maintenance Areas	100
Ozone (VOC's):	
Maintenance areas inside an ozone transport region	50
Maintenance areas outside an ozone transport region	100
Carbon monoxide:	
All Maintenance Areas	100
PM-10:	
All Maintenance Areas	100
Pb:	
All Maintenance Areas	25

(c) The requirements of this subpart shall not apply to the following Federal actions:

(1) Actions where the total of direct and indirect emissions are below the emissions levels specified in paragraph (b) of this section.

(2) Actions which would result in no emissions increase or an increase in emissions that is clearly de minimis:

(i) Judicial and legislative proceedings.

(ii) Continuing and recurring activities such as permit renewals where activities conducted will be similar in scope and operation to activities currently being conducted.

(iii) Rulemaking and policy development and issuance.

(iv) Routine maintenance and repair activities, including repair and maintenance of administrative sites, roads, trails, and facilities.

(v) Civil and criminal enforcement activities, such as investigations, audits, inspections, examinations, prosecutions, and the training of law enforcement personnel.

(vi) Administrative actions such as personnel actions, organizational changes, debt management or collection, cash management, internal agency audits, program budget proposals, and matters relating to the administration and collection of taxes, duties and fees.

(vii) The routine, recurring transportation of materiel and personnel.

(viii) Routine movement of mobile assets, such as ships and aircraft, in home port reassignments and stations (when no new support facilities or personnel are required) to perform as operational groups and/or for repair or overhaul.

(ix) Maintenance dredging and debris disposal where no new depths are required, applicable permits are secured, and disposal will be at an approved disposal site.

(x) Actions, such as the following, with respect to existing structures, properties, facilities and lands where future activities conducted will be similar in scope and operation to activities currently being conducted at the existing structures, properties, facilities, and lands; for example, relocation of personnel, disposition of federally-owned existing structures, properties, facilities, and lands, rent subsidies, operation and maintenance cost subsidies, the exercise of receivership or conservatorship authority, assistance in purchasing structures, and the production of coins and currency.

(xi) The granting of leases, licenses such as for exports and trade, permits, and easements where activities conducted will be similar in scope and operation to activities currently being conducted.

(xii) Planning, studies, and provision of technical assistance.

(xiii) Routine operation of facilities, mobile assets and equipment.

(xiv) Transfers of ownership, interests, and titles in land, facilities, and real and personal properties, regardless of the form or method of the transfer.

(xv) The designation of empowerment zones, enterprise communities, or viticultural areas.

(xvi) Actions by any of the Federal banking agencies or the Federal Reserve Banks, including actions regarding charters, applications, notices, licenses, the supervision or examination of depository institutions or depository institution holding companies, access to the discount window, or the provision of financial services to banking organizations or to any department, agency or instrumentality of the United States.

(xvii) Actions by the Board of Governors of the Federal Reserve System or any Federal Reserve Bank necessary to effect monetary or exchange rate policy.

(xviii) Actions that implement a foreign affairs function of the United States.

(xix) Actions (or portions thereof) associated with transfers of land, facilities, title, and real properties through an enforceable contract or lease agreement where the delivery of the deed is required to occur promptly after a specific, reasonable condition is met, such as promptly after the land is certified as meeting the requirements of CERCLA, and where the Federal agency does not retain continuing authority to control emissions associated with the lands, facilities, title, or real properties.

(xx) Transfers of real property, including land, facilities, and related personal property from a Federal entity to another Federal entity and assignments of real property, including land, facilities, and related personal property from a Federal entity to another Federal entity for subsequent deeding to eligible applicants.

(xxi) Actions by the Department of the Treasury to effect fiscal policy and to exercise the borrowing authority of the United States.

(3) Actions where the emissions are not reasonably foreseeable, such as the following:

(i) Initial Outer Continental Shelf lease sales which are made on a broad scale and are followed by exploration and development plans on a project level.

(ii) Electric power marketing activities that involve the acquisition, sale and transmission of electric energy.

(4) Actions which implement a decision to conduct or carry out a conforming program such as prescribed burning actions which are consistent with a conforming land management plan.

(d) Notwithstanding the other requirements of this subpart, a conformity determination is not required for the following Federal actions (or portion thereof):

(1) The portion of an action that includes major new or modified stationary sources that require a permit under the new source review (NSR) program (section 173 of the Act) or the prevention of significant deterioration program (title I, part C of the Act).

(2) Actions in response to emergencies or natural disasters such as hurricanes, earthquakes, etc., which are commenced on the order of hours or days after the emergency or disaster and, if applicable, which meet the requirements of paragraph (e) of this section.

(3) Research, investigations, studies, demonstrations, or training (other than those exempted under paragraph (c)(2) of this section), where no environmental detriment is incurred and/or, the particular action furthers air quality research, as determined by the State agency primarily responsible for the applicable SIP;

(4) Alteration and additions of existing structures as specifically required by new or existing applicable environmental legislation or environmental regulations (e.g., hush houses for aircraft engines and scrubbers for air emissions).

(5) Direct emissions from remedial and removal actions carried out under the Comprehensive Environmental Response, Compensation and Liability Act and associated regulations to the extent such emissions either comply with the substantive requirements of the PSD/NSR permitting program or are exempted from other environmental regulation under the provisions of CERCLA and applicable regulations issued under CERCLA.

(e) Federal actions which are part of a continuing response to an emergency

or disaster under paragraph (d)(2) of this section and which are to be taken more than 6 months after the commencement of the response to the emergency or disaster under paragraph (d)(2) of this section are exempt from the requirements of this subpart only if:

(1) The Federal agency taking the actions makes a written determination that, for a specified period not to exceed an additional 6 months, it is impractical to prepare the conformity analyses which would otherwise be required and the actions cannot be delayed due to overriding concerns for public health and welfare, national security interests and foreign policy commitments; or

(2) For actions which are to be taken after those actions covered by paragraph (e)(1) of this section, the Federal agency makes a new determination as provided in paragraph (e)(1) of this section.

(f) Notwithstanding other requirements of this subpart, actions specified by individual Federal agencies that have met the criteria set forth in either paragraph (g)(1) or (g)(2) of this section and the procedures set forth in paragraph (h) of this section are presumed to conform, except as provided in paragraph (j) of this section.

(g) The Federal agency must meet the criteria for establishing activities that are presumed to conform by fulfilling the requirements set forth in either paragraph (g)(1) or (g)(2) of this section:

(1) The Federal agency must clearly demonstrate using methods consistent with this subpart that the total of direct and indirect emissions from the type of activities which would be presumed to conform would not:

(i) Cause or contribute to any new violation of any standard in any area;

(ii) Interfere with provisions in the applicable SIP for maintenance of any standard;

(iii) Increase the frequency or severity of any existing violation of any standard in any area; or

(iv) Delay timely attainment of any standard or any required interim emission reductions or other milestones in any area including, where applicable,

emission levels specified in the applicable SIP for purposes of:

(A) A demonstration of reasonable further progress;

(B) A demonstration of attainment; or

(C) A maintenance plan; or

(2) The Federal agency must provide documentation that the total of direct and indirect emissions from such future actions would be below the emission rates for a conformity determination that are established in paragraph (b) of this section, based, for example, on similar actions taken over recent years.

(h) In addition to meeting the criteria for establishing exemptions set forth in paragraphs (g)(1) or (g)(2) of this section, the following procedures must also be complied with to presume that activities will conform:

(1) The Federal agency must identify through publication in the FEDERAL REGISTER its list of proposed activities that are presumed to conform and the basis for the presumptions;

(2) The Federal agency must notify the appropriate EPA Regional Office(s), State and local air quality agencies and, where applicable, the agency designated under section 174 of the Act and the MPO and provide at least 30 days for the public to comment on the list of proposed activities presumed to conform;

(3) The Federal agency must document its response to all the comments received and make the comments, response, and final list of activities available to the public upon request; and

(4) The Federal agency must publish the final list of such activities in the FEDERAL REGISTER.

(i) Notwithstanding the other requirements of this subpart, when the total of direct and indirect emissions of any pollutant from a Federal action does not equal or exceed the rates specified in paragraph (b) of this section, but represents 10 percent or more of a nonattainment or maintenance area's total emissions of that pollutant, the action is defined as a regionally significant action and the requirements of § 93.150 and §§ 93.155 through 93.160 shall apply for the Federal action.

Environmental Protection Agency

§ 93.157

(j) Where an action otherwise presumed to conform under paragraph (f) of this section is a regionally significant action or does not in fact meet one of the criteria in paragraph (g)(1) of this section, that action shall not be presumed to conform and the requirements of § 93.150 and §§ 93.155 through 93.160 shall apply for the Federal action.

(k) The provisions of this subpart shall apply in all nonattainment and maintenance areas.

§ 93.154 Conformity analysis.

Any Federal department, agency, or instrumentality of the Federal government taking an action subject to this subpart must make its own conformity determination consistent with the requirements of this subpart. In making its conformity determination, a Federal agency must consider comments from any interested parties. Where multiple Federal agencies have jurisdiction for various aspects of a project, a Federal agency may choose to adopt the analysis of another Federal agency or develop its own analysis in order to make its conformity determination.

§ 93.155 Reporting requirements.

(a) A Federal agency making a conformity determination under § 93.158 must provide to the appropriate EPA Regional Office(s), State and local air quality agencies and, where applicable, affected Federal land managers, the agency designated under section 174 of the Act and the MPO a 30 day notice which describes the proposed action and the Federal agency's draft conformity determination on the action.

(b) A Federal agency must notify the appropriate EPA Regional Office(s), State and local air quality agencies and, where applicable, affected Federal land managers, the agency designated under section 174 of the Clean Air Act and the MPO within 30 days after making a final conformity determination under § 93.158.

§ 93.156 Public participation.

(a) Upon request by any person regarding a specific Federal action, a Federal agency must make available for review its draft conformity determination under § 93.158 with supporting

materials which describe the analytical methods and conclusions relied upon in making the applicability analysis and draft conformity determination.

(b) A Federal agency must make public its draft conformity determination under § 93.158 by placing a notice by prominent advertisement in a daily newspaper of general circulation in the area affected by the action and by providing 30 days for written public comment prior to taking any formal action on the draft determination. This comment period may be concurrent with any other public involvement, such as occurs in the NEPA process.

(c) A Federal agency must document its response to all the comments received on its draft conformity determination under § 93.158 and make the comments and responses available, upon request by any person regarding a specific Federal action, within 30 days of the final conformity determination.

(d) A Federal agency must make public its final conformity determination under § 93.158 for a Federal action by placing a notice by prominent advertisement in a daily newspaper of general circulation in the area affected by the action within 30 days of the final conformity determination.

§ 93.157 Frequency of conformity determinations.

(a) The conformity status of a Federal action automatically lapses 5 years from the date a final conformity determination is reported under § 93.155, unless the Federal action has been completed or a continuous program has been commenced to implement that Federal action within a reasonable time.

(b) Ongoing Federal activities at a given site showing continuous progress are not new actions and do not require periodic redeterminations so long as such activities are within the scope of the final conformity determination reported under § 93.155.

(c) If, after the conformity determination is made, the Federal action is changed so that there is an increase in the total of direct and indirect emissions, above the levels in § 93.153(b), a new conformity determination is required.

MOBILE6.2 Description

Mobile6.2 is a computer model that is designed to estimate emission factors for various air pollutants typically emitted from vehicle exhaust, brake and tire wear. This is currently the model approved by the USEPA for SIP development and transportation conformity determinations. The model evaluates various vehicles classes, included cars, trucks, buses, and motorcycles and has the capacity to be customized for specific location by choosing localized parameters such as ambient temperature, inspection and maintenance program information and vehicle registration mix.

Mobile6 Emission Calculations
Heavy Duty Diesel Trucks- Class 8A

Pollutant	Emission Factors (g/mi)				Emissions (tons/year)			
	Summer		Winter		15 ppm Sulfur		500 ppm Sulfur	
	Sulfur content ppm		Sulfur content ppm		Alt A*	Alt B,C,E**	Alt A*	Alt B,C,E**
	15	500	15	500				
PM2.5	0.151	0.183	0.165	0.197	0.0009	0.142	0.001	0.169
PM10	0.197	0.229	0.212	0.244	0.0012	0.182	0.001	0.210
VOC	0.334	0.334	0.344	0.344	0.0020	0.296	0.002	0.296
CO	1.24	1.24	1.36	1.36	0.0078	1.168	0.008	1.168
NOx	5.64	5.64	6.01	6.01	0.0344	5.163	0.034	5.163
SO2	0.014	0.481	0.014	0.481	0.0001	0.012	0.003	0.413

Notes:

1. Calculated at 35 mph on arterial roadway
2. Factor applies to HDDV8A truck only
3. Used specific input options, as provided in the Metropolitan Washington Council of Governments
2004 Air Quality Conformity Determination of the Constrained Long Range Plan (Nov. 17, 2004)
Local options include anti-tampering for catalyst removal, fuel inlet restrictor disablement, and missing gas cap.
No I/M program for HDDV
Min/Max temp for winter 33/53 F
Hydrocarbons calculated as VOC
Registration Distribution of HDDV8A specific to Montgomery Co. in 2002.

09WR1.TXT

```
*****
* MOBILE6.2.03 (24-Sep-2003)
* Input file: 09WR1.IN (file 1, run 1).
*****
```

M603 Comment:

User has disabled the calculation of REFUELING emissions.

```
* Reading Registration Distributions from the following external
* data file: MDREGDAT.D
```

M 49 Warning:

1.00 MYR sum not = 1. (will normalize)

M615 Comment:

User supplied VMT mix.

```
* #####
```

```
* Scenario Title : 2009 Winter day/30 mph/arterial
```

```
* File 1, Run 1, Scenario 1.
```

```
* #####
```

```
* Reading PM Gas Carbon ZML Levels
```

```
* from the external data file PMGZML.CSV
```

```
* Reading PM Gas Carbon DR1 Levels
```

```
* from the external data file PMGDR1.CSV
```

```
* Reading PM Gas Carbon DR2 Levels
```

```
* from the external data file PMGDR2.CSV
```

```
* Reading PM Diesel Zero Mile Levels
```

```
* from the external data file PMDZML.CSV
```

```
* Reading the First PM Deterioration Rates
```

```
* from the external data file PMDDR1.CSV
```

```
* Reading the Second PM Deterioration Rates
```

```
* from the external data file PMDDR2.CSV
```

M583 Warning:

The user supplied arterial average speed of 30.0
will be used for all hours of the day. 100% of VMT
has been assigned to the arterial/collector roadway
type for all hours of the day and all vehicle types.

M 48 Warning:

there are no sales for vehicle class HDGV8b

```
* Reading Ammonia (NH3) Basic Emission Rates
```

```
* from the external data file PMNH3BER.D
```

```
* Reading Ammonia (NH3) Sulfur Deterioration Rates
```

```
* from the external data file PMNH3SDR.D
```

Calendar Year: 2009

Month: Jan.

Altitude: Low

Minimum Temperature: 33.0 (F)

Maximum Temperature: 53.0 (F)

Absolute Humidity: 75. grains/lb

Nominal Fuel RVP: 12.9 psi

Weathered RVP: 12.9 psi

Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: No

09WR1.TXT
 Evap I/M Program: No
 ATP Program: Yes
 Reformulated Gas: No

LDDT	Vehicle Type: HDDV	LDGV MC	LDGT12 All Veh	LDGT34 <6000	LDGT >6000	LDGT (All)	HDGV	LDDV
0.0000	0.9998	0.0000	1.0000	0.0000	0.0000	0.0000	0.0002	0.0000

Composite Emission Factors (g/mi):								
0.000	Composite VOC :	0.000	0.000	0.000	0.000	0.000	1.176	0.000
0.393	0.393	0.00	0.393					
0.000	Composite CO :	0.00	0.00	0.00	0.00	0.00	14.30	0.000
1.570	1.570	0.00	1.573					
0.000	Composite NOX :	0.000	0.000	0.000	0.000	0.000	3.630	0.000
6.064	6.064	0.00	6.064					

HDDV8A	Veh. Type: HDDV8B	HDDV2B	HDDV3	HDDV4	HDDV5	HDDV6	HDDV7
0.9998	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Composite Emission Factors (g/mi):							
0.393	Composite VOC :	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000						
1.570	Composite CO :	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000						
6.064	Composite NOX :	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000						

* #####
 * Scenario Title : 2009 Winter day/35 mph/arterial

* File 1, Run 1, Scenario 2.
 * #####

* Reading PM Gas Carbon ZML Levels
 * from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
 * from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
 * from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
 * from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
 * from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates

* from the external data file PMDDR2.CSV

M583 Warning:

The user supplied arterial average speed of 35.0
will be used for all hours of the day. 100% of VMT
has been assigned to the arterial/collector roadway
type for all hours of the day and all vehicle types.

M 48 warning:

there are no sales for vehicle class HDGV8b

Calendar Year: 2009
Month: Jan.
Altitude: Low
Minimum Temperature: 33.0 (F)
Maximum Temperature: 53.0 (F)
Absolute Humidity: 75. grains/lb
Nominal Fuel RVP: 12.9 psi
Weathered RVP: 12.9 psi
Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: Yes
Reformulated Gas: No

LDGT	Vehicle Type: HDDV	LDGV MC	LDGT12 All Veh	LDGT34	LDGT	HDGV	LDDV
	GVWR:		<6000	>6000	(All)		
	VMT Distribution:	0.0000	0.0000	0.0000		0.0002	0.0000
0.0000	0.9998	0.0000	1.0000				

Composite Emission Factors (g/mi):							
0.000	0.344	0.00	0.344	0.000	0.000	1.044	0.000
0.000	1.359	0.00	1.362	0.00	0.00	12.53	0.000
0.000	6.011	0.00	6.011	0.000	0.000	3.776	0.000

HDDV8A	Veh. Type: HDDV8B	HDDV2B	HDDV3	HDDV4	HDDV5	HDDV6	HDDV7
	VMT Mix:	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.9998	0.0000						

Composite Emission Factors (g/mi):							
0.344	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1.359	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000

09WR1.TXT

* #####
* Scenario Title : 2009 Winter day/40 mph/arterial

* File 1, Run 1, Scenario 3.

* #####

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV

M583 warning:

The user supplied arterial average speed of 40.0
will be used for all hours of the day. 100% of VMT
has been assigned to the arterial/collector roadway
type for all hours of the day and all vehicle types.

M 48 warning:

there are no sales for vehicle class HDGV8b

Calendar Year: 2009
Month: Jan.
Altitude: Low
Minimum Temperature: 33.0 (F)
Maximum Temperature: 53.0 (F)
Absolute Humidity: 75. grains/lb
Nominal Fuel RVP: 12.9 psi
Weathered RVP: 12.9 psi
Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: Yes
Reformulated Gas: No

LDDT	Vehicle Type: HDDV	LDGV MC	LDGT12 All Veh	LDGT34 <6000	LDGT >6000	LDGT (All)	HDGV	LDDV
-----	-----	-----	-----	-----	-----	-----	-----	-----
0.0000	0.9998	0.0000	1.0000	0.0000			0.0002	0.0000

Composite Emission Factors (g/mi):
Composite VOC : 0.000 0.000 0.000 0.000 0.952 0.000
0.000 0.308 0.00 0.308
Composite CO : 0.00 0.00 0.00 0.00 11.59 0.000
0.000 1.231 0.00 1.234
Composite NOX : 0.000 0.000 0.000 0.000 3.923 0.000
0.000 6.163 0.00 6.162

HDDV8A	Veh. Type: HDDV8B	HDDV2B	HDDV3	HDDV4	HDDV5	HDDV6	HDDV7
0.9998	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Composite Emission Factors (g/mi):							
0.308	Composite VOC :	0.000	0.000	0.000	0.000	0.000	0.000
1.231	Composite CO :	0.000	0.000	0.000	0.000	0.000	0.000
6.163	Composite NOX :	0.000	0.000	0.000	0.000	0.000	0.000

* #####
 * Scenario Title : 2009 Winter day/30 mph/arterial

* File 1, Run 1, Scenario 4.
 * #####

* Reading PM Gas Carbon ZML Levels
 * from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
 * from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
 * from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
 * from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
 * from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
 * from the external data file PMDDR2.CSV

M583 warning:
 The user supplied arterial average speed of 30.0
 will be used for all hours of the day. 100% of VMT
 has been assigned to the arterial/collector roadway
 type for all hours of the day and all vehicle types.

M 48 warning:
 there are no sales for vehicle class HDGV8b

Calendar Year: 2009
 Month: Jan.
 Altitude: Low
 Minimum Temperature: 33.0 (F)
 Maximum Temperature: 53.0 (F)
 Absolute Humidity: 75. grains/lb
 Nominal Fuel RVP: 12.9 psi
 Weathered RVP: 12.9 psi
 Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: No

Evap I/M Program:	No
ATP Program:	Yes
Reformulated Gas:	No

LDDT	Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV
	HDDV	MC	All Veh				
	GVWR:		<6000	>6000	(All)		
-----	-----	-----	-----	-----	-----	-----	-----
VMT	Distribution:	0.0000	0.0000	0.0000		0.0002	0.0000
0.0000	0.9998	0.0000	1.0000				

Composite Emission Factors (g/mi):							
0.000	Composite VOC :	0.000	0.000	0.000	0.000	1.176	0.000
	0.393	0.00	0.393				
0.000	Composite CO :	0.00	0.00	0.00	0.00	14.30	0.000
	1.570	0.00	1.573				
0.000	Composite NOX :	0.000	0.000	0.000	0.000	3.630	0.000
	6.064	0.00	6.064				

HDDV8A	Veh. Type: HDDV8B	HDDV2B	HDDV3	HDDV4	HDDV5	HDDV6	HDDV7
-----	-----	-----	-----	-----	-----	-----	-----
0.9998	MT Mix: 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Composite Emission Factors (g/mi):							
0.393	Composite VOC :	0.000	0.000	0.000	0.000	0.000	0.000
1.570	Composite CO :	0.000	0.000	0.000	0.000	0.000	0.000
6.064	Composite NOX :	0.000	0.000	0.000	0.000	0.000	0.000

* File 1, Run 1, Scenario 5.

```
* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV
```


* Reading the Second PM Deterioration Rates
 * from the external data file PMDDR2.CSV

M583 Warning:

The user supplied arterial average speed of 35.0
 will be used for all hours of the day. 100% of VMT
 has been assigned to the arterial/collector roadway
 type for all hours of the day and all vehicle types.

M 48 Warning:

there are no sales for vehicle class HDGV8b

Calendar Year: 2009
 Month: Jan.
 Altitude: Low
 Minimum Temperature: 33.0 (F)
 Maximum Temperature: 53.0 (F)
 Absolute Humidity: 75. grains/lb
 Nominal Fuel RVP: 12.9 psi
 Weathered RVP: 12.9 psi
 Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: No
 Evap I/M Program: No
 ATP Program: Yes
 Reformulated Gas: No

LDDT	Vehicle Type: HDDV	LDGV MC	LDGT12 All Veh	LDGT34	LDGT	HDGV	LDDV
	GVWR:		<6000	>6000	(All)		
VMT Distribution:		0.0000	0.0000	0.0000		0.0002	0.0000
0.0000	0.9998	0.0000	1.0000				

Composite Emission Factors (g/mi):							
Composite VOC :	0.000	0.000	0.000	0.000	0.000	1.044	0.000
0.000	0.344	0.00	0.344				
Composite CO :	0.00	0.00	0.00	0.00	0.00	12.53	0.000
0.000	1.359	0.00	1.362				
Composite NOX :	0.000	0.000	0.000	0.000	0.000	3.776	0.000
0.000	6.011	0.00	6.011				

HDDV8A	Veh. Type: HDDV8B	HDDV2B	HDDV3	HDDV4	HDDV5	HDDV6	HDDV7
VMT Mix:		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.9998	0.0000						

Composite Emission Factors (g/mi):							
Composite VOC :	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.344	0.000						
Composite CO :	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1.359	0.000						
Composite NOX :	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6.011	0.000						

09WR1.TXT

* #####
 * Scenario Title : 2009 winter day/40 mph/arterial

* File 1, Run 1, Scenario 6.
 * #####

* Reading PM Gas Carbon ZML Levels
 * from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
 * from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
 * from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
 * from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
 * from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
 * from the external data file PMDDR2.CSV

M583 warning:

The user supplied arterial average speed of 40.0
 will be used for all hours of the day. 100% of VMT
 has been assigned to the arterial/collector roadway
 type for all hours of the day and all vehicle types.

M 48 warning:

there are no sales for vehicle class HDGV8b

Calendar Year: 2009
 Month: Jan.
 Altitude: Low
 Minimum Temperature: 33.0 (F)
 Maximum Temperature: 53.0 (F)
 Absolute Humidity: 75. grains/lb
 Nominal Fuel RVP: 12.9 psi
 Weathered RVP: 12.9 psi
 Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: No
 Evap I/M Program: No
 ATP Program: Yes
 Reformulated Gas: No

LDDT	Vehicle Type: HDDV	LDGV MC	LDGT12 All Veh	LDGT34 <6000	LDGT >6000	LDGT (All)	HDGV	LDDV
0.0000	0.9998	0.0000	1.0000	0.0000	0.0000	0.0000	0.0002	0.0000

Composite Emission Factors (g/mi):								
0.000	0.308	0.00	0.308	0.000	0.000	0.000	0.952	0.000
0.000	1.231	0.00	1.234	0.000	0.000	0.000	11.59	0.000
0.000	6.163	0.00	6.162	0.000	0.000	0.000	3.923	0.000

09WR1.TXT

HDDV8A	Veh. Type:	HDDV2B	HDDV3	HDDV4	HDDV5	HDDV6	HDDV7
	HDDV8B	-----	-----	-----	-----	-----	-----
0.9998	VMT Mix:	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000						

Composite Emission Factors (g/mi):							
0.308	Composite VOC :	0.000	0.000	0.000	0.000	0.000	0.000
	0.000						
1.231	Composite CO :	0.000	0.000	0.000	0.000	0.000	0.000
	0.000						
6.163	Composite NOX :	0.000	0.000	0.000	0.000	0.000	0.000
	0.000						

09WR2.TXT

```
*****
* MOBILE6.2.03 (24-Sep-2003)
* Input file: 09WR2.IN (file 1, run 1).
*****
```

M603 Comment:

User has disabled the calculation of REFUELING emissions.

```
* Reading Registration Distributions from the following external
* data file: MDREGDAT.D
```

M 49 Warning:

1.00 MYR sum not = 1. (will normalize)

M615 Comment:

User supplied VMT mix.

```
* #####
```

```
* Scenario Title : 2009 Winter day/30 mph/arterial
```

```
* File 1, Run 1, Scenario 1.
```

```
* #####
```

```
* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV
```

```
* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV
```

```
* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV
```

```
* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV
```

```
* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV
```

```
* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
```

M583 Warning:

The user supplied arterial average speed of 30.0
will be used for all hours of the day. 100% of VMT
has been assigned to the arterial/collector roadway
type for all hours of the day and all vehicle types.

M 48 warning:

there are no sales for vehicle class HDGV8b

```
* Reading Ammonia (NH3) Basic Emission Rates
* from the external data file PMNH3BER.D
```

```
* Reading Ammonia (NH3) Sulfur Deterioration Rates
* from the external data file PMNH3SDR.D
```

M111 Warning:

The input diesel sulfur level of 500.0 ppm exceeds
the 2007 HDD Rule diesel sulfur limit of 15 ppm.

Calendar Year: 2009
Month: Jan.
Altitude: Low
Minimum Temperature: 33.0 (F)
Maximum Temperature: 53.0 (F)
Absolute Humidity: 75. grains/lb
Nominal Fuel RVP: 12.9 psi
Weathered RVP: 12.9 psi

Fuel Sulfur Content: 09WR2.TXT
30. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: Yes
Reformulated Gas: No

LDDT	Vehicle Type: HDDV	LDGV MC	LDGT12 All Veh	LDGT34	LDGT	HDGV	LDDV
	GVWR:		<6000	>6000	(All)		
-----	-----	-----	-----	-----	-----	-----	-----
0.0000	0.9998	0.0000	1.0000	0.0000		0.0002	0.0000

Composite Emission Factors (g/mi):							
0.000	0.393	0.00	0.393	0.000	0.000	1.176	0.000
0.000	1.570	0.00	1.573	0.00	0.00	14.30	0.000
0.000	6.064	0.00	6.064	0.000	0.000	3.630	0.000

HDDV8A	Veh. Type: HDDV8B	HDDV2B	HDDV3	HDDV4	HDDV5	HDDV6	HDDV7
0.9998	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Composite Emission Factors (g/mi):							
0.393	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1.570	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6.064	0.000	0.000	0.000	0.000	0.000	0.000	0.000

* #####
* Scenario Title : 2009 Winter day/35 mph/arterial

* File 1, Run 1, Scenario 2.
* #####

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

09WR2.TXT

* Reading the First PM Deterioration Rates
 * from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
 * from the external data file PMDDR2.CSV

M583 Warning:

The user supplied arterial average speed of 35.0
 will be used for all hours of the day. 100% of VMT
 has been assigned to the arterial/collector roadway
 type for all hours of the day and all vehicle types.

M 48 Warning:

there are no sales for vehicle class HDGV8b

M111 Warning:

The input diesel sulfur level of 500.0 ppm exceeds
 the 2007 HDD Rule diesel sulfur limit of 15 ppm.

Calendar Year: 2009
 Month: Jan.
 Altitude: Low
 Minimum Temperature: 33.0 (F)
 Maximum Temperature: 53.0 (F)
 Absolute Humidity: 75. grains/lb
 Nominal Fuel RVP: 12.9 psi
 Weathered RVP: 12.9 psi
 Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: No
 Evap I/M Program: No
 ATP Program: Yes
 Reformulated Gas: No

LDDT	Vehicle Type: HDDV	LDGV MC	LDGT12 All Veh	LDGT34	LDGT	HDGV	LDDV
	GVWR:		<6000	>6000	(All)		
-----	-----	-----	-----	-----	-----	-----	-----
VMT Distribution:		0.0000	0.0000	0.0000		0.0002	0.0000
0.0000	0.9998	0.0000	1.0000				

Composite Emission Factors (g/mi):							
0.000	0.344	0.00	0.344	0.000	0.000	0.000	1.044
0.000	0.344	0.00	0.344	0.000	0.000	0.000	1.044
0.000	1.359	0.00	1.362	0.000	0.000	0.000	12.53
0.000	1.359	0.00	1.362	0.000	0.000	0.000	12.53
0.000	6.011	0.00	6.011	0.000	0.000	0.000	3.776
0.000	6.011	0.00	6.011	0.000	0.000	0.000	3.776

HDDV8A	Veh. Type: HDDV8B	HDDV2B	HDDV3	HDDV4	HDDV5	HDDV6	HDDV7
-----	-----	-----	-----	-----	-----	-----	-----
VMT Mix:		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.9998	0.0000						

Composite Emission Factors (g/mi):							
0.344	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.344	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.344	0.000	0.000	0.000	0.000	0.000	0.000	0.000

09WR2.TXT
 1.359 0.000
 Composite NOX : 0.000 0.000 0.000 0.000 0.000 0.000
 6.011 0.000

* #####
 * Scenario Title : 2009 Winter day/40 mph/arterial

* File 1, Run 1, Scenario 3.
 * #####

* Reading PM Gas Carbon ZML Levels
 * from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
 * from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
 * from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
 * from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
 * from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
 * from the external data file PMDDR2.CSV

M583 warning:

The user supplied arterial average speed of 40.0
 will be used for all hours of the day. 100% of VMT
 has been assigned to the arterial/collector roadway
 type for all hours of the day and all vehicle types.

M 48 warning:

there are no sales for vehicle class HDGV8b

M111 warning:

The input diesel sulfur level of 500.0 ppm exceeds
 the 2007 HDD Rule diesel sulfur limit of 15 ppm.

Calendar Year: 2009
 Month: Jan.
 Altitude: Low
 Minimum Temperature: 33.0 (F)
 Maximum Temperature: 53.0 (F)
 Absolute Humidity: 75. grains/lb
 Nominal Fuel RVP: 12.9 psi
 Weathered RVP: 12.9 psi
 Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: No
 Evap I/M Program: No
 ATP Program: Yes
 Reformulated Gas: No

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV
LDDT HDDV MC All Veh						
GVWR:	<6000	>6000	(All)			
VMT Distribution:	0.0000	0.0000	0.0000		0.0002	0.0000
0.0000 0.9998 0.0000 1.0000						

```

-----
Composite Emission Factors (g/mi):
Composite VOC : 0.000 0.000 0.000 0.000 0.952 0.000
0.000 0.308 0.00 0.308
Composite CO : 0.00 0.00 0.00 0.00 11.59 0.000
0.000 1.231 0.00 1.234
Composite NOX : 0.000 0.000 0.000 0.000 3.923 0.000
0.000 6.163 0.00 6.162
-----

```

```

-----
HDDV8A Veh. Type: HDDV2B HDDV3 HDDV4 HDDV5 HDDV6 HDDV7
HDDV8B
-----
VMT Mix: 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.9998 0.0000
-----

```

```

-----
Composite Emission Factors (g/mi):
Composite VOC : 0.000 0.000 0.000 0.000 0.000 0.000
0.308 0.000
Composite CO : 0.000 0.000 0.000 0.000 0.000 0.000
1.231 0.000
Composite NOX : 0.000 0.000 0.000 0.000 0.000 0.000
6.163 0.000
-----

```

```

* #####
* Scenario Title : 2009 Winter day/30 mph/arterial

```

```

* File 1, Run 1, Scenario 4.
* #####

```

```

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

```

```

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

```

```

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

```

```

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

```

```

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

```

```

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV

```

M583 Warning:

The user supplied arterial average speed of 30.0
will be used for all hours of the day. 100% of VMT
has been assigned to the arterial/collector roadway
type for all hours of the day and all vehicle types.

M 48 warning:

there are no sales for vehicle class HDGV8b

M111 Warning:

The input diesel sulfur level of 500.0 ppm exceeds
the 2007 HDD Rule diesel sulfur limit of 15 ppm.

09WR2.TXT

Calendar Year: 2009
Month: Jan.
Altitude: Low
Minimum Temperature: 33.0 (F)
Maximum Temperature: 53.0 (F)
Absolute Humidity: 75. grains/lb
Nominal Fuel RVP: 12.9 psi
Weathered RVP: 12.9 psi
Fuel Sulfur Content: 30. ppm

Exhaust I/M Program:	No
Evap I/M Program:	No
ATP Program:	Yes
Reformulated Gas:	No

LDDT	Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV
	HDDV	MC	All Veh				
	GVWR:		<6000	>6000	(All)		
-----	-----	-----	-----	-----	-----	-----	-----
VMT	Distribution:	0.0000	0.0000	0.0000		0.0002	0.0000
0.0000	0.9998	0.0000	1.0000				

Composite Emission Factors (g/mi):							
0.000	Composite VOC :	0.000	0.000	0.000	0.000	1.176	0.000
		0.393	0.00	0.393			
0.000	Composite CO :	0.00	0.00	0.00	0.00	14.30	0.000
		1.570	0.00	1.573			
0.000	Composite NOX :	0.000	0.000	0.000	0.000	3.630	0.000
		6.064	0.00	6.064			

HDDV8A	Veh. Type: HDDV8B	HDDV2B	HDDV3	HDDV4	HDDV5	HDDV6	HDDV7
-----	-----	-----	-----	-----	-----	-----	-----
0.9998	MT Mix: 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Composite Emission Factors (g/mi):							
0.393	Composite VOC :	0.000	0.000	0.000	0.000	0.000	0.000
1.570	Composite CO :	0.000	0.000	0.000	0.000	0.000	0.000
6.064	Composite NOX :	0.000	0.000	0.000	0.000	0.000	0.000

```
* #####
* Scenario Title : 2009 winter day/35 mph/arterial
```

* File 1, Run 1, Scenario 5.

* #

```
* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV
```

- * Reading PM Gas Carbon DR1 Levels
- * from the external data file PMGDR1.CSV
- * Reading PM Gas Carbon DR2 Levels
- * from the external data file PMGDR2.CSV
- * Reading PM Diesel Zero Mile Levels
- * from the external data file PMDZML.CSV
- * Reading the First PM Deterioration Rates
- * from the external data file PMDDR1.CSV
- * Reading the Second PM Deterioration Rates
- * from the external data file PMDDR2.CSV

M583 warning:

The user supplied arterial average speed of 35.0
will be used for all hours of the day. 100% of VMT
has been assigned to the arterial/collector roadway
type for all hours of the day and all vehicle types.

M 48 warning:

there are no sales for vehicle class HDGV8b

M111 warning:

The input diesel sulfur level of 500.0 ppm exceeds
the 2007 HDD Rule diesel sulfur limit of 15 ppm.

Calendar Year: 2009

Month: Jan.

Altitude: Low

Minimum Temperature: 33.0 (F)

Maximum Temperature: 53.0 (F)

Absolute Humidity: 75. grains/lb

Nominal Fuel RVP: 12.9 psi

Weathered RVP: 12.9 psi

Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: No

Evap I/M Program: No

ATP Program: Yes

Reformulated Gas: No

LDDT	Vehicle Type: HDDV	LDGV MC	LDGT12 All Veh	LDGT34 <6000	LDGT >6000	LDGT (All)	HDGV	LDDV
0.0000	0.9998	0.0000	1.0000	0.0000			0.0002	0.0000

Composite Emission Factors (g/mi):								
0.000	0.344	0.00	0.344	0.000	0.000	0.000	1.044	0.000
0.000	1.359	0.00	1.362	0.000	0.000	0.000	12.53	0.000
0.000	6.011	0.00	6.011	0.000	0.000	0.000	3.776	0.000

HDDV8A	Veh. Type: HDDV8B	HDDV2B	HDDV3	HDDV4	HDDV5	HDDV6	HDDV7

-----	-----						
0.9998	VMT Mix: 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Composite Emission Factors (g/mi):							
0.344	Composite VOC :	0.000	0.000	0.000	0.000	0.000	0.000
1.359	Composite CO :	0.000	0.000	0.000	0.000	0.000	0.000
6.011	Composite NOX :	0.000	0.000	0.000	0.000	0.000	0.000

```
* #####
* Scenario Title : 2009 winter day/40 mph/arterial
```

* File 1, Run 1, Scenario 6.

* #

```
* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV
```

```
* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV
```

```
* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV
```

```
* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV
```

```
* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV
```

```
* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
```

M583 Warning:

The user supplied arterial average speed of 40.0 will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.

M 48 Warning:

```
there are no sales for vehicle class HDGV8b
```

M111 Warning:

The input diesel sulfur level of 500.0 ppm exceeds the 2007 HDD Rule diesel sulfur limit of 15 ppm.

Calendar Year: 2009
Month: Jan.
Altitude: Low
Minimum Temperature: 33.0 (F)
Maximum Temperature: 53.0 (F)
Absolute Humidity: 75. grains/lb
Nominal Fuel RVP: 12.9 psi
Weathered RVP: 12.9 psi
Fuel Sulfur Content: 30. ppm

Exhaust I/M Program:	No
Evap I/M Program:	No
ATP Program:	Yes
Reformulated Gas:	No

09WR2.TXT

LDDT	Vehicle Type: HDDV	LDGV MC	LDGT12 All veh	LDGT34 <6000	LDGT >6000	LDGT (All)	HDGV	LDDV
	GVWR:							
-----	-----	-----	-----	-----	-----	-----	-----	-----
0.0000	0.9998	0.0000	1.0000	0.0000			0.0002	0.0000
	VMT Distribution:	0.0000	0.0000	0.0000				

Composite Emission Factors (g/mi):

0.000	Composite VOC :	0.000	0.000	0.000	0.000	0.952	0.000
	0.308	0.00	0.308				
0.000	Composite CO :	0.00	0.00	0.00	0.00	11.59	0.000
	1.231	0.00	1.234				
0.000	Composite NOX :	0.000	0.000	0.000	0.000	3.923	0.000
	6.163	0.00	6.162				

HDDV8A	Veh. Type: HDDV8B	HDDV2B	HDDV3	HDDV4	HDDV5	HDDV6	HDDV7
-----	-----	-----	-----	-----	-----	-----	-----
0.9998	VMT Mix:	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000						

Composite Emission Factors (g/mi):

0.308	Composite VOC :	0.000	0.000	0.000	0.000	0.000	0.000
	0.000						
1.231	Composite CO :	0.000	0.000	0.000	0.000	0.000	0.000
	0.000						
6.163	Composite NOX :	0.000	0.000	0.000	0.000	0.000	0.000
	0.000						

```

*****
* MOBILE6.2.03 (24-Sep-2003)
* Input file: 09WR2.IN (file 1, run 1).
*****

```

* MOBILE6.2.03 (24-Sep-2003)

* Input file: 09WR2.IN (file 1, run 1).

* * Scenario Title : 2009 winter day/30 mph/arterial

* File 1, Run 1, Scenario 1.

※

Gasoline	Fuel	Sulfur Content:	2009 Jan. 30.
Diesel	Fuel	Sulfur Content:	500.
	Particle Size	Cutoff:	2.50
	Reformulated Gas:		No

MC	vehicle type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV
MC	A11 Veh								

	VMT Distribution:	0.0000	0.0000	0.0002	0.0000	0.9998
	0.0000	I.0000				

Composite Emission Factors (q/mi):

Composite Emission Factor 3 (g/m ³).									
-----	ECARBON:	-----	-----	-----	-----	-----	-----	-----	-----
	0.0836								
-----	OCARBON:	-----	-----	-----	-----	-----	-----	-----	-----
	0.0657								
	S04:								
0.0000	0.0336								
Total Exhaust	PM:								
0.0142	0.1829								
	Total PM:								
0.0142	0.1972								

[illegible]

09WR2.PM

Composite Emission Factors (g/mi):
 ECARBON: 0.0000 0.0000 0.0000 0.0000 0.0000 0.0836 0.0000 0.0000
 OCARBON: 0.0000 0.0000 0.0000 0.0000 0.0000 0.0657 0.0000 0.0000
 SO4: 0.0000 0.0000 0.0000 0.0000 0.0000 0.0337 0.0000 0.0000
 Total Exhaust PM: 0.0000 0.0000 0.0000 0.0000 0.0000 0.1829 0.0000 0.0000
 Total PM: 0.0000 0.0000 0.0000 0.0000 0.0000 0.1972 0.0000 0.0000

* * * * *
 * Scenario Title : 2009 winter day/35 mph/arterial

* File 1, Run 1, Scenario 2.
 * * * * *

Calendar Year: 2009
 Month: Jan.
 Gasoline Fuel Sulfur Content: 30. ppm
 Diesel Fuel Sulfur Content: 500. ppm
 Particle Size Cutoff: 2.50 Microns
 Reformulated Gas: No

Vehicle Type: LDGV LDGT12 LDGT34 LDGT HDDV
 MC All Veh
 GVWR: <6000 >6000 (All)
 VMT Distribution: 0.0000 0.0000 0.0000 0.0000 0.9998
 0.0000 1.0000

Composite Emission Factors (g/mi):

ECARBON: 0.0836 0.0000 0.0000 0.0000 0.0836
 OCARBON: 0.0657 0.0000 0.0000 0.0000 0.0657
 SO4: 0.0336 0.0000 0.0000 0.0000 0.0337
 Total Exhaust PM: 0.0039 0.0000 0.0000 0.0000 0.1829
 0.0142 0.1829
 Total PM: 0.0039 0.0000 0.0000 0.0000 0.1972
 0.0142 0.1972

veh. Type: HDDV2B HDDV3 HDDV4 HDDV5 HDDV6 HDDV7 HDDV8A HDDV8B

09WR2.PM

VMT Mix: 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

Composite Emission Factors (g/mi):

ECARBON: 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
 OCARBON: 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
 SO4: 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
 Exhaust PM: 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
 Total PM: 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

* * * * *
 * Scenario Title : 2009 winter day/40 mph/arterial
 * File 1, Run 1, Scenario 3.
 * * * * *

Calendar Year: 2009
 Month: Jan.
 Gasoline Fuel Sulfur Content: 30. ppm
 Diesel Fuel Sulfur Content: 500. ppm
 Particle Size Cutoff: 2.50 Microns
 Reformulated Gas: No

MC All Veh Vehicle Type: LDGV LDGT12 LDGT34 LDGT LDGV LDDV LDDT HDDV
 GVWR: <6000 >6000 (All)
 VMT Distribution: 0.0000 0.0000 0.0000 0.0002 0.0000 0.0000 0.0000 0.9998
 0.0000 1.0000

Composite Emission Factors (g/mi):

ECARBON: 0.0836 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0836
 OCARBON: 0.0657 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0657
 SO4: 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
 Exhaust PM: 0.0039 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
 Total Exhaust PM: 0.0142 0.0039 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0142
 Total PM: 0.0039 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0039

MOBILE6 INPUT FILE :
 * Heavy duty diesel trucks, S=500 ppm

REPORT FILE : 09wr2.txt
 SPREADSHEET :
 DATABASE output :
 With FIELDNAMES :
 DATABASE VEHICLES : 11111 11111111 1 111 111111121 111
 DATABASE FACILITIES: Arterial local
 DAILY OUTPUT :
 EMISSIONS TABLE : 09wr2.tb1
 POLLUTANTS : HC CO NOX
 PARTICULATES : SO4 OCARBON ECARBON

RUN DATA
 MIN/MAX TEMP : 33. 53.
 ABSOLUTE HUMIDITY : 75
 FUEL RVP : 12.9
 EXPRESS HC AS VOC :
 EXPAND HDDV EFS :
 NO REFUELING :
 ANTI-TAMP PROG : 89 77 50 22222 22222222 2 12 098. 12211112
 REG DIST : MDREGDAT.D

VMT FRACTIONS :
 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.0 0.0 0.0 0.0 0.0

SCENARIO RECORD : Scenario Title : 2009 winter day/30 mph/arterial
 CALENDAR YEAR : 2009
 EVALUATION MONTH : 1
 ALTITUDE : 1
 DIESEL SULFUR : 500
 PARTICULATE EF : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV PMDDR2.CSV
 PARTICLE SIZE : 2.5
 SEASON : 1
 Average SPEED : 30 arterial

SCENARIO RECORD : Scenario Title : 2009 winter day/35 mph/arterial
 CALENDAR YEAR : 2009
 EVALUATION MONTH : 1
 ALTITUDE : 1
 DIESEL SULFUR : 500
 PARTICULATE EF : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV PMDDR2.CSV
 PARTICLE SIZE : 2.5
 SEASON : 1
 Average SPEED : 35 arterial


```

SCENARIO RECORD
CALENDAR YEAR
EVALUATION MONTH
ALTITUDE
DIESEL SULFUR
PARTICULATE EF
PARTICLE SIZE
SEASON
Average SPEED
: Scenario Title : 2009 winter day/40 mph/arterial
: 2009
: 1
: 1
: 500
: PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV PMDDR2.CSV
: 2.5
: 1
: 40 arterial

```

```

SCENARIO RECORD
CALENDAR YEAR
EVALUATION MONTH
ALTITUDE
DIESEL SULFUR
PARTICULATE EF
PARTICLE SIZE
SEASON
Average SPEED
: Scenario Title : 2009 winter day/30 mph/arterial
: 2009
: 1
: 1
: 500
: PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV PMDDR2.CSV
: 10
: 1
: 30 arterial

```

```

SCENARIO RECORD
CALENDAR YEAR
EVALUATION MONTH
ALTITUDE
DIESEL SULFUR
PARTICULATE EF
PARTICLE SIZE
SEASON
Average SPEED
: Scenario Title : 2009 winter day/35 mph/arterial
: 2009
: 1
: 1
: 500
: PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV PMDDR2.CSV
: 10
: 1
: 35 arterial

```

```

SCENARIO RECORD
CALENDAR YEAR
EVALUATION MONTH
ALTITUDE
DIESEL SULFUR
PARTICULATE EF
PARTICLE SIZE
SEASON
Average SPEED
: Scenario Title : 2009 winter day/40 mph/arterial
: 2009
: 1
: 1
: 500
: PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV PMDDR2.CSV
: 10
: 1
: 40 arterial

```

END OF RUN

MOBILE6 INPUT FILE :
 * Heavy duty diesel trucks

REPORT FILE : 09wR1.txt
 SPREADSHEET :
 DATABASE output :
 With FIELDNAMES :
 DATABASE VEHICLES : 11111 111111111 1 111 111111121 111
 DATABASE FACILITIES: Arterial local
 DAILY OUTPUT :
 EMISSIONS TABLE : 09wR1.tb1
 POLLUTANTS : HC CO NOX
 PARTICULATES : SO4 OCARBON ECARBON

RUN DATA
 MIN/MAX TEMP : 33. 53.
 ABSOLUTE HUMIDITY : 75
 FUEL RVP : 12.9
 EXPRESS HC AS VOC :
 EXPAND HDDV EFS :
 NO REFUELING :
 ANTI-TAMP PROG : 89 77 50 22222 222222222 2 12 098. 12211112
 REG DIST : MDREGDAT.D

VMT FRACTIONS :
 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.0 0.0 0.0 0.0 0.0

SCENARIO RECORD : Scenario Title : 2009 winter day/30 mph/arterial
 CALENDAR YEAR : 2009
 EVALUATION MONTH : 1
 ALTITUDE : 1
 DIESEL SULFUR : 15
 PARTICULATE EF : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV PMDDR2.CSV
 PARTICLE SIZE : 2.5
 SEASON : 1
 Average SPEED : 30 arterial

SCENARIO RECORD : Scenario Title : 2009 winter day/35 mph/arterial
 CALENDAR YEAR : 2009
 EVALUATION MONTH : 1
 ALTITUDE : 1
 DIESEL SULFUR : 15
 PARTICULATE EF : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV PMDDR2.CSV
 PARTICLE SIZE : 2.5
 SEASON : 1
 Average SPEED : 35 arterial

```

SCENARIO RECORD
CALENDAR YEAR      : 2009
EVALUATION MONTH   : 1
ALTITUDE            : 1
DIESEL SULFUR       : 15
PARTICULATE EF      : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV PMDDR2.CSV
PARTICLE SIZE       : 2.5
SEASON              : 1
Average SPEED       : 40 arterial

```

```

SCENARIO RECORD
CALENDAR YEAR      : 2009
EVALUATION MONTH   : 1
ALTITUDE            : 1
DIESEL SULFUR       : 15
PARTICULATE EF      : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV PMDDR2.CSV
PARTICLE SIZE       : 10
SEASON              : 1
Average SPEED       : 30 arterial

```

```

SCENARIO RECORD
CALENDAR YEAR      : 2009
EVALUATION MONTH   : 1
ALTITUDE            : 1
DIESEL SULFUR       : 15
PARTICULATE EF      : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV PMDDR2.CSV
PARTICLE SIZE       : 10
SEASON              : 1
Average SPEED       : 35 arterial

```

```

SCENARIO RECORD
CALENDAR YEAR      : 2009
EVALUATION MONTH   : 1
ALTITUDE            : 1
DIESEL SULFUR       : 15
PARTICULATE EF      : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV PMDDR2.CSV
PARTICLE SIZE       : 10
SEASON              : 1
Average SPEED       : 40 arterial

```

END OF RUN

0.0142 0.1972

[illegible]

Composite Emission Factors (g/mi):

[illegible]

* # # # # # # # # # # # # # # # #
* Scenario Title: 2009 winter day/30 mph/arterial

* File 1. Run 1. Scenario 4.

[illegible]

Calendar Year: 2009

Month: Jan.

Gasoline Fuel Sulfur Content: 30. ppm

Diesel Fuel Sulfur Content: 500. ppm

Particle Size Cutoff: 10.00 Microns

Reformulated Gas: No

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	Vehicle Type: All veh	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV
MC									
			<6000	>6000	(All)				
	GWR:								

VMT Distribution:
0.0000 1.0000

Composite	Emission Factors (g/mi):				
-----	ECARBON:	-----	-----	-----	0.0000
	0.0908				0.0000
	OCARBON:	-----	-----	-----	0.0000
-----	0.0714				0.0714

Composite Emission Factors (g/mi):
ECARBON: -----
0.0908 -----
OCARBON: -----
0.0714 -----
SO4: 0.0000 0.0000 0.0000 0.0014 0.0000 0.0337
0.0000 0.0336
Total Exhaust PM: 0.0042 0.0000 0.0000 0.0461 0.0000 0.1959
0.0205 0.1958
Total PM: 0.0042 0.0000 0.0000 0.0946 0.0000 0.2444
0.0205 0.2444

09WR2.PM

Veh. Type: HDDV2B HDDV3 HDDV4 HDDV5 HDDV6 HDDV7 HDDV8A HDDV8B
VMT Mix: 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.9998 0.0000

Composite Emission Factors (g/mi):
ECARBON: 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0908 0.0000
OCARBON: 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0714 0.0000
SO4: 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0337 0.0000
Total Exhaust PM: 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1959 0.0000
Total PM: 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.2444 0.0000

* #
* Scenario Title : 2009 winter day/40 mph/arterial

* File 1, Run 1, Scenario 6.
* #

Calendar Year: 2009
Month: Jan.
Gasoline Fuel Sulfur Content: 30. ppm
Diesel Fuel Sulfur Content: 500. ppm
Particle Size Cutoff: 10.00 Microns
Reformulated Gas: No

Vehicle Type: LDGV LDGT12 LDGT34 LDGT LDDV LDDT HDDV
MC All Veh
GVWR: <6000 >6000 (All)

VMT Distribution:	0.0000	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000	0.9998
1.0000								

Composite Emission Factors (g/mi):								
ECARBON:	0.0908							0.0908
OCARBON:	0.0714							0.0714
SO4:	0.0336							0.0337
Total Exhaust PM:	0.1958							0.1959
Total PM:	0.2444							0.2444

Veh. Type:	HDDV2B	HDDV3	HDDV4	HDDV5	HDDV6	HDDV7	HDDV8A	HDDV8B
VMT Mix:	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.9998	0.0000

Composite Emission Factors (g/mi):								
ECARBON:	0.0000							0.0000
OCARBON:	0.0000							0.0000
SO4:	0.0000							0.0000
Total Exhaust PM:	0.0000							0.0000
Total PM:	0.0000							0.0000

```

*****
* MOBILE6.2.03 (24-Sep-2003)
* Input file: 09WR1.IN (file 1, run 1).
*****

```

* Input file: 09WR1.IN (file 1, run 1).

* File 1. Run 1. Scenario 1.

Gasoline	Fuel Sulfur Content:	2009 Jan. 30.
Diesel	Fuel Sulfur Content:	15.
	Particle Size Cutoff:	2.50
	Reformulated Gas:	No

Composite Emission Factors (q/mi):

[illegible]

VMT Mix:	0.0000	0.0000	0.0000	0.0000	0.9998	0.0000
----------	--------	--------	--------	--------	--------	--------

Composite Emission Factors (q/mi):

<hr/>						
Emissions	CO ₂	CH ₄	N ₂ O	HFC	PFC	SF ₆
<hr/>						
Total Exhaust PM:	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total PM:	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<hr/>						
ECARBON:	0.0000	0.0000	0.0000	0.0000	0.0000	0.0836
OCARBON:	0.0000	0.0000	0.0000	0.0000	0.0000	0.0657
S04:	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010
Exhaust PM:	0.0000	0.0000	0.0000	0.0000	0.0000	0.1503
Total PM:	0.0000	0.0000	0.0000	0.0000	0.0000	0.1646
<hr/>						

* scenario Title : 2009 winter day/40 mph/arterial

* File 1. Run 1. Scenario 3.

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Calendar Year: 2009

Year: 2003
Month: Jan.

monent:	5 min:
Gasoline Fuel	30. ppm
Sulfur content:	

Sample	Asphaltene Content, %	Resin Content, %	Asphaltene Content, %	Resin Content, %	Asphaltene Content, %	Resin Content, %	Asphaltene Content, %	Resin Content, %
1	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
2	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
3	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
4	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
5	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
6	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
7	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
8	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
9	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
10	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
11	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
12	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
13	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
14	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
15	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
16	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
17	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
18	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
19	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
20	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
21	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
22	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
23	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
24	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
25	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
26	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
27	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
28	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
29	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
30	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
31	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
32	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
33	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
34	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
35	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
36	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
37	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
38	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
39	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
40	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
41	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
42	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0</

Particle size cutoff: 2.50 microns
Fuel sulfur concn: 13.0 ppm

Reformulated Gas: No

	LDGV	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV
MC All veh							
Type:							
GVWR:			(All)				
VMT Distribution:							
0.0000 I.0000	0.0000	<6000	>6000	0.0002	0.0000	0.0000	0.9998

Composite Emission Factors (g/mi):

	Composite	Emission Factor	(g/m ³)						
-----	ECARBON:	0.0836	-----	-----	-----	-----	-----	-----	-----
-----	OCARBON:	0.0657	-----	-----	-----	-----	-----	-----	-----
0.0000	S04:	0.0010	0.0000	0.0000	0.0000	0.0014	0.0000	0.0000	0.0010
Total Exhaust PM:	0.0039	0.0039	0.0000	0.0000	0.0000	0.0388	0.0000	0.0000	0.1503
0.0142	Total PM:	0.0039	0.0000	0.0000	0.0000	0.0531	0.0000	0.0000	0.1646

0.0142 0.1646

[illegible]

Composite Emission Factors (g/mi):					
ECARBON:	0.0000	0.0000	0.0000	0.0000	0.0836
OCARBON:	0.0000	0.0000	0.0000	0.0000	0.0657
SO4:	0.0000	0.0000	0.0000	0.0000	0.0010
Total Exhaust PM:	0.0000	0.0000	0.0000	0.0000	0.1503
Total PM:	0.0000	0.0000	0.0000	0.0000	0.1646

* scenario Title: 2009 winter day/30 mph/arterial

* File 1. Run 1, Scenario 4.

[illegible]

Calendar Year: 2009

Month: Jan.

Gasoline Fuel Sulfur Content: 30. ppm

Diesel Fuel Sulfur Content: 15. ppm

Particle Size Cutoff: 10.00 Microns

Reformulated Gas: No

MC	Vehicle Type: All Veh	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV
	GVWR:		<6000	>6000	(All)				
	VMT Distribution:	0.0000	0.0000	0.0000		0.0002	0.0000	0.0000	0.9998
0.0000	1.0000								

Composite Emission Factors (g/mi):	
ECARBON:	0.0908
OCARBON:	0.0714

0.0000 SO4: 0.0000 0.0000 0.0000 0.0013 0.0000 0.0000 0.0010
Total Exhaust PM: 0.0042 0.0000 0.0000 0.0460 0.0000 0.1632
0.0205 0.1632
Total PM: 0.0042 0.0000 0.0000 0.0946 0.0000 0.2118
0.0205 0.2118

Veh. Type: HDDV2B HDDV3 HDDV4 HDDV5 HDDV6 HDDV7 HDDV8A HDDV8B
VMT Mix: 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.9998 0.0000

Composite Emission Factors (g/mi):
ECARBON: 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0908 0.0000
OCARBON: 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0714 0.0000
SO4: 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0010 0.0000
Total Exhaust PM: 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1632 0.0000
Total PM: 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.2118 0.0000

* * * * *
* Scenario Title : 2009 winter day/35 mph/arterial

* File 1, Run 1, Scenario 5.

* * * * *
* * * * *

Calendar Year: 2009
Month: Jan.
Gasoline Fuel Sulfur Content: 30. ppm
Diesel Fuel Sulfur Content: 15. ppm
Particle Size Cutoff: 10.00 Microns
Reformulated Gas: No

MC Vehicle Type: LDGV LDGT12 LDGT34 LDGT HDGV LDDV LDGT HDDV
All Veh GVWR: <6000 >6000 (All)

VMT Distribution: 0.0000 0.0000 0.0000 0.0002 0.0000 0.0000 0.0000 0.9998
0.0000 1.0000

Composite Emission Factors (g/mi):

	Composite Emission Factor kg CO ₂ /MWh (90 mtpa)				
-----	ECARBON:	-----	-----	-----	0.0000
-----	0.0908	-----	-----	-----	0.0000
-----	OCARBON:	-----	-----	-----	0.0000
-----	0.0714	-----	-----	-----	0.0000
0.0000	S04:	0.0000	0.0000	0.0014	0.0000
Total Exhaust PM:	0.0010	0.0000	0.0000	0.0000	0.0010
0.0205	PM:	0.0042	0.0000	0.0461	0.1632
	0.1632				
Total PM:	0.0042	0.0000	0.0000	0.0946	0.2118
0.0205	0.2118				

[illegible]

Composite Emission Factors (g/mi):	
ECARBON:	0.0000
OCARBON:	0.0000
SO4:	0.0000
Total Exhaust PM:	0.0000
Total PM:	0.0000

* # # # # # # # # # # # # # # # # # #
* Scenario Title : 2009 winter day/40 mph/arterial

* File 1, Run 1, Scenario 6.

* # # # # # # # # # #

Calendar Year: 2009

Month: Jan.

Gasoline Fuel Sulfur Content:	30. ppm
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Diesel Fuel Sulfur Content: 15. ppm

Particle size Cutoff: 10.00 Microns

Reformulated Gas: No

	vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDGV	LDDT	HDDV
MC	All veh								
	GVWR:		<6000	>6000	(All)				

VMT Distribution:	0.0000	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000	0.9998
1.0000								

Composite Emission Factors (g/mi):								
ECARBON:	0.0908	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0908
OCARBON:	0.0714	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0714
SO4:	0.0010	0.0000	0.0000	0.0000	0.0014	0.0000	0.0000	0.0010
Total Exhaust PM:	0.1632	0.0042	0.0000	0.0000	0.0461	0.0000	0.0000	0.1632
Total PM:	0.2118	0.0042	0.0000	0.0000	0.0946	0.0000	0.0000	0.2118

Veh. Type:	HDDV2B	HDDV3	HDDV4	HDDV5	HDDV6	HDDV7	HDDV8A	HDDV8B
VMT Mix:	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.9998	0.0000

Composite Emission Factors (g/mi):								
ECARBON:	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0908	0.0000
OCARBON:	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0714	0.0000
SO4:	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0000
Total Exhaust PM:	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1632	0.0000
Total PM:	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2118	0.0000

LAND USE

- HISTORIC PHOTOGRAPHS OF EAST DALECARLIA PROCESSING SITE

142 Sites with
Grid Sample
Arsenic Exceedances
through 8/26/2002
(Validated and
Preliminary Results)

Spring Valley Operable Unit 5
Washington D.C.

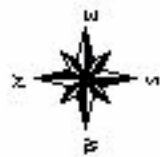
Legend

At least one grid sample

- > 20 ppm As
- > 43 ppm As
- > 150 ppm As

Groupings

- POIs
- Buildings
- Roads
- Non-Residential Acreage
- CTA
- Sampled Area (OU-4)



0 1000 Feet

Scale:	1 : 10,000
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File:	y:\projects\Fedusaac\springvalley\figua.APP
Date:	8/26/2002
Figure Number:	X-X
Page Number:	X-X

PARSONS

